

# **Appendix A**

## **EMS Sample Documentation**

- I. Environmental Policy**
- II. Legal & Other Requirements**
- III. Environmental Aspects And Impacts**
- IV. Objectives and Targets**
- V. Environmental Management Programs**
- VI. Training**
- VII. Internal & External Communication**
- VIII. Document Control And Record Management**
- IX. Environmental Management System (EMS) Manual**
- X. Operational Control**
- XI. Emergency Preparedness**
- XII. Monitoring And Measurement**
- XIII. EMS Internal Audit**
- XIV. Nonconformance And Corrective Action**
- XV. Management Review**

# **SAMPLE EMS DOCUMENTATION**

## ***ENVIRONMENTAL POLICY***



**Charleston CPW – Environmental Policy**  
**City of San Diego WWC – Environmental Policy**  
**Kent County DPW – Environmental/Biosolids Policy**

- File/Retrieval ID (Optional):
- Record Schedule No./Retention Period:  
03603A/Permanent
- Originator: P2 Team

## Commissioners of Public Works

### 4.2 - Environmental Management System – Environmental Policy Statement

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The Charleston Commissioners of Public Works (CPW) is committed to the improvement of the environment for present and future generations through:

- The treatment and delivery of safe potable water.
- The collection, treatment, and proper disposal of wastewater.
- The responsible impact of its activities, products and services on the environment.
- The continual environmental improvement and the prevention of pollution.
- Compliance with all applicable federal, state, and local laws, regulations, statutes and other environmentally related requirements to which the organization subscribes.
- The establishment of environmental objectives and targets that are periodically reviewed to ensure success.
- And communication of its Environmental Management System to CPW associates and to other interested parties.

CPW will establish and maintain an Environmental Management System (EMS) that corresponds to the ISO 14001 Standard and the mission, vision, strategic business plan and core values adopted by CPW.

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William Koopman, Jr.,  
General Manager

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John Cook, PE,  
Assistant General Manger

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Kin Hill, PE,  
Director of Operations

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Dorothy G. Harrison,  
Director of Administrative Services

# **METROPOLITAN WASTEWATER DEPARTMENT WASTEWATER COLLECTION DIVISION**

## ***ENVIRONMENTAL POLICY***

The Wastewater Collection (WWC) Division of the City of San Diego Metropolitan Wastewater Department is committed to providing safe and effective sewer maintenance services in a responsible and pro-active manner. A central mission of the WWC Division is to prevent discharges to waters of the U.S., protect local riverine and coastal resources and public health, support Departmental strategic goals and meet regulatory agency standards at the lowest possible cost.

In fulfilling this commitment, it is the policy of the WWC Division to:

- continually improve the Division's work processes and practices, communicate its efforts to protect environmental health and public safety to interested stakeholders, and effectively manage or minimize impacts to San Diego's urban and coastal environment;
- comply with legal and regulatory requirements applicable to the Division, as well as with other voluntary standards to which we subscribe; and,
- prevent environmental pollution that may be attributable to WWC Division operations, and otherwise seek to minimize waste and impacts to natural resources.

In keeping with this policy, the WWC Division will establish and maintain an Environmental Management System that provides a framework for setting, and periodically reviewing, the WWC Division's environmental objectives and targets for each of its processes, services and/or activities.

This policy is communicated regularly to all WWC Division staff and will be made available to regulatory agencies, the general public, or other interested parties upon request.



# KENT COUNTY LEVY COURT POLICY

POLICY NUMBER:	E-6	PAGE	1	OF	1	PAGE(S)
SUBJECT:	Environmental/Biosolids Policy					
ADOPTION DATE:	December 9, 2003					
EFFECTIVE DATE:	December 9, 2003					
SUPERCEDES:	N/A					
SUPPLEMENTS:	N/A					

The Kent County Levy Court commits to reduce the impact of its operations on the environment, by adopting the International Organization for Standardizations ((ISO) 14001 Environmental Management Systems standards, and the National Biosolids Partnership (NBP) Code of Good Practice for the wastewater collection and treatment facility operations directed by the Department of Public Works. In addition, the Levy Court requires all Public Works contractors employed at the covered facilities to abide by this policy.

The Levy Court commits to:

- Comply with all applicable environmental laws and regulatory requirements, to the NBP Code of Good Practice and any other requirements to which the organization subscribes;
- Have an environmental and biosolids vision and mission, then develop/achieve the objectives and targets to implement this mission;
- Improve continuously, through the EMS, management of our environment, our wastewater effluent and our biosolids product;
- Readily share our wastewater operations and biosolids information with interested stakeholders; and
- Practice daily pollution prevention activities.

This policy is communicated to all Kent County employees and the general public.

DRAFTED BY:	Kent County Department of Public Works Environmental Management Systems Core Team
REVIEWED BY:	Global Environmental and Technology Foundation for the US EPA and the Sewer Advisory Board
DATE SUBMITTED:	December 9, 2003

# **SAMPLE EMS DOCUMENTATION**

## ***LEGAL AND OTHER REQUIREMENTS***



***Charleston CPW – Handling of Legal Requirements Procedure***  
***City of Gastonia WWTP – EMS/Legal and Other Requirements Review***  
***Standard Operating Procedure***  
***City of San Diego WWC – Regulatory Tracking and Analysis Procedure***

# **CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE**

*The on-line version and secured hardcopy are the controlled documents. The secured hardcopy will be identified by an "Official Document" stamp giving date of distribution. Any and all other documents are uncontrolled. Contact the EMS Program Manager for revision level status.*

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**Effective Date:** October 1, 2000 **Page 1 of 3**

**Revision: 2** **Identification Number: EMS – 4.3.2**

**Title:** Handling of Legal Requirements Procedure

**Prepared By:** EMS Procedures Subcommittee

**Reviewed By:** EMS Management Steering Committee

**Approved By:** William E. Koopman, Jr., General Manager  
John Cook PE, Assistant General Manager

**Date Approved:** August 25, 2000

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## **0.0 Requirement ISO 14001; Sub Clause 4.3.2**

### **1.0 Purpose**

This document describes the procedure to be followed for accessing and tracking regulatory and other legal requirements.

### **2.0 Scope**

This procedure is used to facilitate tracking of legal requirements and to assist departments in the maintenance of regulatory compliance applicable to ISO 14001 Environmental Management System activities, products, or services.

### **3.0 Responsibility & Authority**

3.1 Sections heads and departments heads are responsible to identify and analyze environmental regulations and other legal requirements relevant to their activities, products or services and communicating this information to the associates within their section or department.

3.2 It is the responsibility of all associates to comply with the regulations.

## **4.0 Procedure**

### **4.1 Determination of the Type of Regulatory Requirement to be Identified**

Each department shall identify the relevant environmental laws, regulations and industry standards CPW adheres to. This may include international, federal, state, regional and local regulations. Types of regulatory requirements to be identified include environmental legislation that covers the protection of air, water, land, natural resources and humans.

### **4.2 Impacts**

A listing of major areas of the environment impacted by the department operation; that is, air, water, soil, flora, fauna, and human (such as Risk Management) will be made. The list will also include major types of wastes or products that the operation generates or utilizes such as domestic waste, chemical waste, waste oils, hazardous waste, paper, metals, glass, and so forth.

### **4.3 Agency Lists**

A check of agency lists will be made. If the departmental operation impacts a component of the environment or generates waste, the corresponding agency should be consulted for regulatory requirements that may apply.

### **4.4 Regulatory Services**

A regulatory service, library, or regulatory contact (such as South Carolina Department of Health and Environmental Control) will be made to get a copy of relevant environmental regulations. All levels of government will be checked to see if there are regulatory requirements impacting departmental operations.

### **4.5 New Project or Change to Existing Operation**

Each department shall review environmental requirements prior to the initiation of a new project or modification of an existing operation. The department head will check and coordinate with Design and Construction to ensure applicable city and county codes are identified and met.

### **4.6 Consulting Engineers and Contractors working on site shall be made aware of this procedure to ensure regulatory requirements are identified and met.**

### **4.7 Organization and Tracking**

A listing of regulatory summary sheets, or the regulations themselves, shall be maintained, by paper file or electronically, and updated as necessary.



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**Effective Date:**

**October 1, 2000**

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**Revision: 2**

**Identification Number: EMS – 4.3.2**

**Title:**

**Handling of Legal Requirements Procedure**

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4.8 Each department shall maintain a listing of regulatory requirements, including detailed summary sheets, or the regulations themselves. This listing may be maintained, by paper file or electronically or both and updated as necessary and at least annually. Regulatory listings or summaries should be posted electronically or made easily accessible to other departments.

## **5.0 Related Documentation**

- 5.1 Regulations
- 5.2 Laws and Acts
- 5.3 Regulatory Self Assessment Reports
- 5.4 Permits and Permit Applications

<b>Standard Operating Procedure – EMS-0100.001</b> <b>Name: EMS/Legal and Other Requirements Review Procedure</b>	Corresponding Requirements: ISO Standard: 4.3 & 4.3.2 EMS Manual: 4.3 & 4.3.2 NBP Element: #4 Revision #: 5
Prepared By: Beth Eckert, Environmental/Administrative Manager	Revision Date: 3/17/03
Approved By: Beth Eckert, Environmental/Administrative Manager	Effective Date: 1/1/00
Signature:	Page 1 of 3

## EMS/Legal and Other Requirements Review Standard Operating Procedure

### 1.0 Purpose

- 1.1 The following procedure covers various requirements for reviewing areas of the Environmental Management System (EMS). This procedure also provides a process for identifying, reviewing, and maintaining the legal and other requirements documents. Designated levels of management for each area of the EMS will complete the reviews.

### 2.0 Associated Equipment

- 2.1 None

### 3.0 Associated Reference Material

- 3.1 *ANSI/ISO 14001-1996 Environmental Management Systems – specifications with guidance for use.*
- 3.2 *City of Gastonia – Environmental Management System Manual (EMS-0100.000)*
- 3.3 *Legal and Other Requirements document (EMS-0102.001)*
- 3.4 *National Biosolids Partnership (NBP) EMS Guidance Manual March,2001*

### 4.0 Procedure

#### 4.1 EMS Manual

4.1.1 The EMS Team will review the EMS Manual, which includes a review of the EMS policy, annually. See EMS Legal and Other Requirements document (EMS-0102.001) reporting section for more specific scheduling. Any required revisions will be reported to the POTW Director for approval and the EMS Coordinator, or designee, will make the appropriate changes.

4.1.2 Any proposed changes to the EMS policy will be reviewed and approved by the City Council as deemed necessary by the Management Review Board (MRB).

#### 4.2 Aspects and Impacts

4.2.1 A review of the aspects and impacts and significance will be conducted annually for existing and new operations. Also, at any time during the year that a process is added or modified. See EMS Legal and Other Requirements document (EMS-0102.001) reporting section for more specific scheduling. Any changes to the current significance list will be updated by the EMS Coordinator, or designee.

#### 4.3 Emergency response plans

4.3.1 A review of the emergency response plans will be conducted semi-annually. See EMS Legal and Other Requirements document (EMS-0102.001) reporting section for more specific scheduling. Any changes will be reported to Division Supervisor for approval. The Division Safety Supervisor will make the approved changes to the plans and forward to the EMS Coordinator, or designee. The EMS Coordinator, or designee, will update the computer network and issue controlled copies using the appropriate distribution lists.

#### 4.4 Quarterly MRB report review

4.4.1 At least quarterly, the MRB will review compliance reports, EMS Improvement Program progress reports, EMS audit results, and any documented corrective actions reports. Any changes to the EMS as a result of these reviews will be approved by the EMS Coordinator.

4.4.2 The MRB will review monthly compliance with existing regulations and the suitability and adequacy of the EMS.

4.4.3 The legal and other requirements for the current quarter being reviewed and the up-coming quarter will be discussed at the quarterly MRB meeting.

#### 4.5 Legal and Other Requirements

4.5.1 At least quarterly, persons listed in the Legal and Other Requirements document (EMS-0102.001) as the responsible party will review the existing legal and other requirements for their area and identify any new or modified items. They are responsible for reporting this information to the EMS Coordinator, or designee, for updating the Legal and Other Requirements document (EMS-0102.001).

4.5.2 This information shall include, but is not limited to, new permit dates, inspection dates, contractor information, regulatory reporting requirements, and review dates of any identified legal and other requirements currently listed.

4.5.3 After the information is updated in the Legal and Other Requirements document, designated supervision in each area will review and approve the changes and send them to the EMS Coordinator, or designee. The EMS Coordinator, or designee, will update the ISO directory and distribute controlled documents as directed by the document control matrix (EMS-0101.000).

#### 4.6 Objectives and Targets

4.6.1 Annually, designated supervisors in each area will review the current list of significant aspects and impacts along with the current objectives and targets and establish a revised list of objectives and targets for the coming year. See EMS Legal and Other Requirements document (EMS-0102.001) reporting section for more specific scheduling.

4.6.2 Any new objectives and targets and/or revisions will be submitted to the designated supervisor in each area for review and approval. The EMS Coordinator, or designee, after receiving approved objectives and targets will enter the revisions onto ISO directory and update the EMS improvement programs.

### 5.0 Revision History

Revision		C/PAR #	Reason for Revision	Description of Revision
Date	#			
3/17/03	5	EMS-0084	C/PAR	Added a modification history section
3/17/03	5	EMS-0116	C/PAR	Added NBP requirements as a part of the WWTD's participation in the NBP demonstration group.
3/17/03	5	Clarification of procedure and expansion		Reorganized procedure for clarification purposes and expanded it for the department.

## **DD-SEOP 4.3.2**

### **REGULATORY TRACKING AND ANALYSIS**

#### **1.0 PURPOSE AND SCOPE**

The purpose of this procedure is to ensure that the Wastewater Collection Division (WWC) of the Metropolitan Wastewater Department (MWWD) has access to laws, and regulations that apply to its operations.

This procedure covers laws, regulations, and other requirements established at the federal, state and local levels that apply to the operations of WWC Division sections. The WWC Division takes these requirements into consideration when setting its environmental objectives and targets (Reference to DD SEOP 4.3.3, Establishment of Environmental Objectives and Targets).

#### **2.0 DEFINITIONS**

Reserved

#### **3.0 RESPONSIBILITY AND AUTHORITY**

- 3.1 The MWWD Environmental Monitoring and Technical Service Division (EMTSD) and Environmental Program Management Division (EPM) are two of several service providers to the WWC Division, as outlined in the Service Level Agreements (SLA). The EMTSD and EPM bear primary responsibility within the overall MWWD for tracking and maintaining updated records and reference documents for environmental laws and regulations as well as environmental permitting requirements.
- 3.2 WWC Division personnel, including the Deputy Director or each Section Manager will be delegated to disseminate information regarding any changes in regulations that could affect operations or administration.

#### **4.0 PROCEDURE**

##### General

The permitting and other legal requirements applicable to WWC Division operations are determined and routinely monitored by the numerous city organizations, including but not limited to the Metropolitan Wastewater Department Environmental Monitoring and Technical Service Division (EMTSD) Permits and Compliance Division and the Engineering and Program Management (EPM) Division. Additional regulatory support is provided by other City Departments, regional water enforcement agencies and the U.S. EPA. Such requirements are documented in Section-specific operating permit inspection checklists prepared by the EMTSD Permits and Compliance Section Head, which are distributed to the EMR.

The EMR is responsible for coordinating the update of this information with EMTSD and EPM or in liaison with other appropriate City Departmental or resource agency staff at least once per year or whenever:

- an existing applicable environmental rule or regulation is modified;
- an existing activity, product or service is to be modified; or
- a new activity, product or service is considered.

Compliance with the requirements identified in each section-specific list is verified by or at the direction of the EMR or DD at least annually, as described in Chapter 5, Section 5.1. The EMR maintains access to copies of relevant legislation through contacts with appropriate regulatory agency representatives, libraries, information services, and/or the City Attorney's office.

As detailed in DD SEOP 4.5.4, "Environmental Management System Audits and Compliance Verification", the WWC is responsible for auditing the regulatory compliance status of the Division on a based upon a pre-determined schedule, and providing copies of appropriate inspection check sheets to the EMR, EMTSD or EPM as applicable, with comments.

Follow-up evaluations of regulated status will occur on a bi-annual basis, or will occur sooner if changes in the applicable laws and regulations are identified or significant changes in the operations of WWC Division occur.

4.1 Within MWWD, the EMTSD and EPM share specific responsibilities for tracking applicable environmental laws and regulations and identifying those related to the operations of the WWC Division. The Divisions employ a variety of techniques and information sources to regularly track, identify and evaluate applicable laws and regulations. These include, but are not limited to:

- Federal Government's Federal Register;
- commercial services and databases;
- Internet and WWC Division Intranet web sites;
- the City Attorney's office;
- information made available and provided by trade associations and membership organizations; and
- communications with federal, state and local regulatory agencies and authorities.

4.2 The EMTSD and EPM monitor these information sources on a regular basis i.e. quarterly to ensure that new regulations and issues are identified and managed in coordination with the WWC in a timely manner.

4.3 As necessary, "off-site" resources (e.g., consultants and attorneys) may be called upon to assist in evaluating applicable laws and regulations or in developing programs in response to applicable laws and regulations. Where off-site resources are used for this purpose, the EMTSD and/or EPM is responsible for coordinating the effort with appropriate WWC Division staff.

- 4.4 The EMTSD, EPM and Section Managers disseminate information on applicable laws and regulations (and the adherent potential impacts of the activities, processes, operations conducted by the WWC Division) to appropriate personnel. The determination of which personnel must be informed and the method for providing the information is at discretion, based on the circumstances of each situation.
- 4.5 The EMTSD and EPM compile and maintain copies of significant applicable environmental laws and regulations. Where copies of such laws and regulations are not maintained at the Section Head's offices, EMR will ensure that ready access is available from other sources (i.e., the other sources listed in Item 2 above).
- 4.6 If periodic site audits (i.e., planned environmental inspections, general environmental compliance audits, ISO 14001 environmental management system audits, etc.) or management reviews indicate or identify additional laws and regulations must be tracked and evaluated, the EMR ensures that these activities take place.
- 4.7 The EMR will ensure that appropriate changes are developed and implemented in cases where new environmental regulations, Division environmental policies and/or industry standards could affect the continued performance of the ISO 14001 environmental management system.)

## **5.0 REFERENCES**

WWC Division Environmental Management Plan  
Section 3.1, Environmental Aspects  
Section 3.2, Legal Requirements  
Section 3.3, Objectives and Targets

DD-SEOP 4.3.1, Environmental Aspects and Impacts Identification

DD-SEOP 4.3.3, Establishment of Environmental Objectives, Targets and Programs

DD-SEOP 4.5.4, Environmental Management System Audits and Compliance Verification

**SAMPLE EMS DOCUMENTATION**

***ENVIRONMENTAL ASPECTS AND IMPACTS***



***Kent County DPW – Determination of Significant Aspects Procedure***  
***Kent County DPW – Significant Aspect List***  
***Rivanna Sewer and Water Authority – Significant Aspect List***



Kent County Dept. of Public Works Dover, Delaware	Title: Determination of Significant Aspects		
	Document No.: <b>2-02-P01</b>	Date Effective: <b>11-01-2003</b>	Page: <b>1 of 9</b>
Environmental Procedures Manual	Prepared By: <b>Jim Newton</b>	Approved By:	Revisions No.: <b>0</b>
Determination of Significant Aspects			

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### 1.0 PURPOSE

- 1.1 The purpose of this procedure is to establish the general requirements for the work process of determining the significant environmental aspects that are applicable to the Kent County Dept. of Public Works Regional Wastewater Treatment Facility.
- 1.2 The purpose of this work process is to establish the Kent County Dept. of Public Works specification for determining the significant environmental aspects that apply to the facility to facilitate compliance with the applicable requirements.

### 2.0 SCOPE

- 2.1 This procedure addresses the determination of significant environmental aspects applicable to the Kent County Dept. of Public Works Environmental Program.

### 3.0 DEFINITIONS

- 3.1 *Activity* – Something that occurs at the wastewater facility in order to transport wastewater, or produce clean wastewater or Kentorganite.
- 3.2 *Critical Control Point* – An environmental aspect that is considered critical to ensuring a quality biosolids product as required under the National Biosolids Partnership (NBP) EMS program.
- 3.3 *Environmental Aspect* – The element of any activity, as defined above, that interacts with the environment. An aspect is the element that causes the impact to the environment from any activity that occurs at the wastewater facility, examples, include burning fuel, used oil recycling, etc.

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- 3.4 *Environmental Impact* – Any change to the environment, either positive or negative, wholly or partially resulting from the wastewater facility’s activities. An impact is the effect of any aspect with respect to the environment. Examples include degradation of air or water quality, depletion or conservation of natural resources, etc.
- 3.5 *Frequency/Probability* – The number of times an environmental aspect occurs (e.g., daily, monthly, yearly, infrequently, etc.) or the likelihood of the aspect occurring (very, not very).
- 3.6 *Input/Output (I/O) Charts* – Diagrams used to describe activities that occur at the wastewater facility. Each diagram presents the activity, key resources needed by the activity, products and byproducts of the activity, and wastes generated by the activity.
- 3.7 *Significant Environmental Aspect* – An environmental aspect that the Core Team has determined to be serious enough to be included in the EMS program’s objectives and targets in order to ensure that it is properly controlled.

#### **4.0 REFERENCES**

- 4.1 Kent County Dept. of Public Works Environmental Management System Program Manual

#### **5.0 REQUIREMENTS**

##### **5.1 *Identifying Activities***

Each activity that occurs at the Kent County Regional Wastewater Treatment Facility shall be identified to its smallest or most manageable component in order to ensure that all potential environmental impacts are considered. The activity shall be a subset of the main activities presented in the I/O chart presented as Attachment A.

- 5.1.1 Each area manager shall identify all activities that occur under his/her direction. The list shall be maintained as Appendix A to this procedure.
- 5.1.2 Each area manager shall present the activity as a completed I/O chart and submit them to the EMS Core Team for review. All completed charts shall be presented as Appendix B to this procedure.
- 5.1.3 Area managers shall use operations personnel to assist in the preparation of the I/O charts for their area. As an option, each area manager shall ask all operations personnel to list five (5) activities that they routinely perform. The list shall be prepared and consolidated by the Core Team

<b>Kent County Dept. of Public Works Dover, Delaware</b>	<b>Title:</b>		
	<b>Determination</b>	<b>of Significant</b>	<b>Aspects</b>
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### *5.2 Identifying Aspects*

The EHS Core Team shall conduct a review of the I/O charts for each area and determine with consultation of the area managers and operations personnel the aspects associated with the each chart. The aspects shall be listed on the aspect table presented as Attachment C. All completed aspect tables shall be presented as Appendix C to this procedure.

### *5.3 Identifying Impacts*

For each aspect presented on the Table included as Attachment C, an environmental impact shall be assigned. This shall be based on impacts in one of the following areas:

- Changes in air quality
- Changes in water quality
- Direct exposure to agent
- Changes in habitat
- Nuisance (including odor)
- Conserves/depletes resources
- Frequency/Probability
- Is it regulated
- Is it a critical control point

### *5.4 Determining Significance*

The EMS Core team shall determine the significance of each environmental aspect by using best professional judgment with respect to the impacts associated with each aspect, assigning a value from 0-5 for each aspect (with 0 being no impact, and 5 being major impact). The value assigned for the aspect shall be the value that represents the average of all of the values determined by the Core Team for that aspect. A regulated activity will receive a rating of 5 and an unregulated activity will receive a rating of 0. A critical control point (CCP) will receive a rating of 3, while an activity that is not a CCP will receive a rating of 0. A ranking shall be prepared and presented to the Core Team by the Environmental Program Manager for all aspects evaluated in this manner. The Core Team shall meet to evaluate the final rankings of all environmental aspects, and determine which of these shall be designated “significant.” The prioritized list shall be maintained as Appendix D to this procedure.

## **6.0 RESPONSIBILITIES**

6.1 Determining the activities, preparing the I/O charts, and completing the environmental aspect tables shall be the responsibility of the area managers for the facility with the EMS Core Team providing quality control.

6.2 The EMS Core Team shall develop the significance criteria for all identified environmental aspects under the direction of the Environmental Program Manager, and assign the final rankings for all environmental aspects. The criteria shall be set such that no more than 6-8 aspects shall be given the ranking of “significant”.

<b>Kent County Dept. of Public Works Dover, Delaware</b>	<b>Title:</b>		
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6.3 The Environmental Program Manager will publish the prioritized list of significant aspects as an appendix to this procedure and ensure that it is current.

6.4 The significant aspect list will be reevaluated yearly and compared against the list of objectives and targets to determine if new objectives and targets are required and whether the current list of significant aspects supports the current objectives and targets.

## **7.0 DOCUMENTS**

### **7.1 *Related Documents***

None

## **8.0 RECORDS**

### **8.1 *Required Records***

The list of activities; the list of aspects, and the priority list of aspects shall all be maintained as appendices to this procedure.

### **8.2 *Records Control***

All records, if required, pertaining to this procedure shall be controlled in accordance with the Environmental Management System Procedures 2-11-P02, Controlling Records, and 2-10-P02, Confidentiality.

## **9.0 ATTACHMENTS**

9.1 *Attachment A* - Diagram of major activities associated with the wastewater facility.

9.2 *Attachment B* - Blank I/O diagram

9.3 *Attachment C* - Blank aspect table

## **10.0 APPENDICES**

10.1 Appendix A – List of all identified activities associated with the Kent County regional wastewater treatment facility.

10.2 Appendix B – Completed I/O charts associated with the activities listed in Appendix A.

10.3 Appendix C – Aspect tables provided for each of the activities listed in Appendix A.

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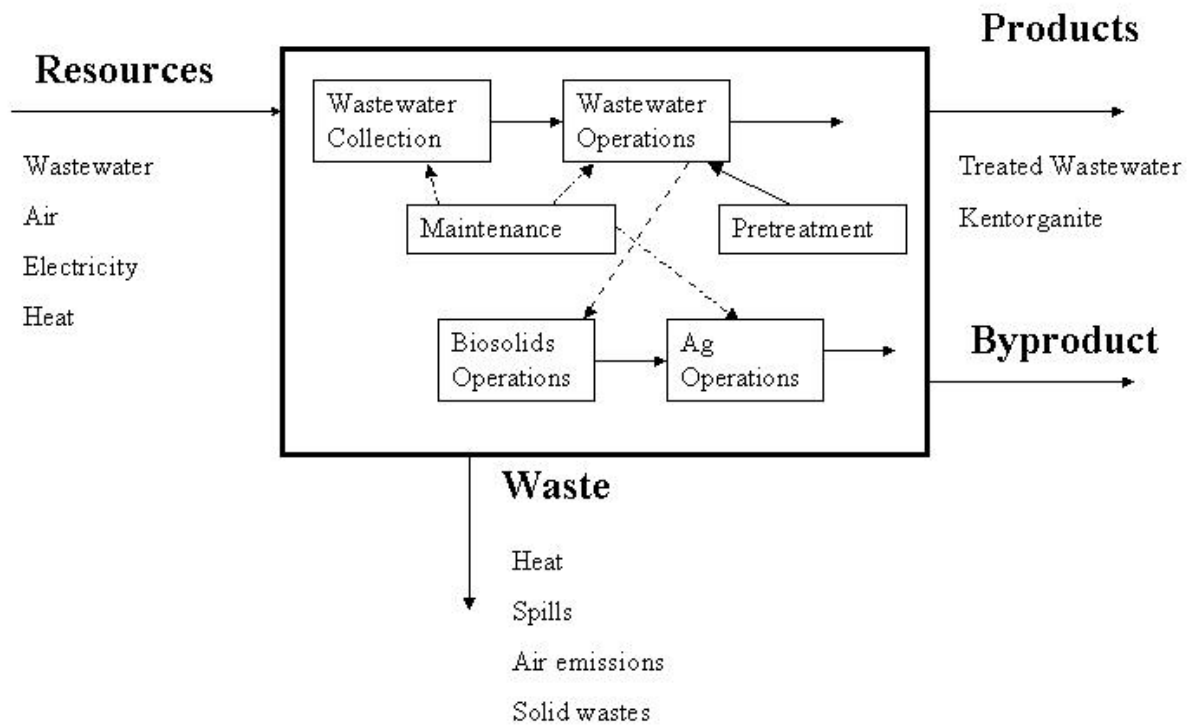
10.4 Appendix D – Prioritized list of aspects as determined following the significance criteria presented in Section 5.4.

## 11.0 REVISION HISTORY

Revision No.	Effective Date	Responsible Person	Description of Revision	Appv. By
0		Jim Newton	Initial Issue	

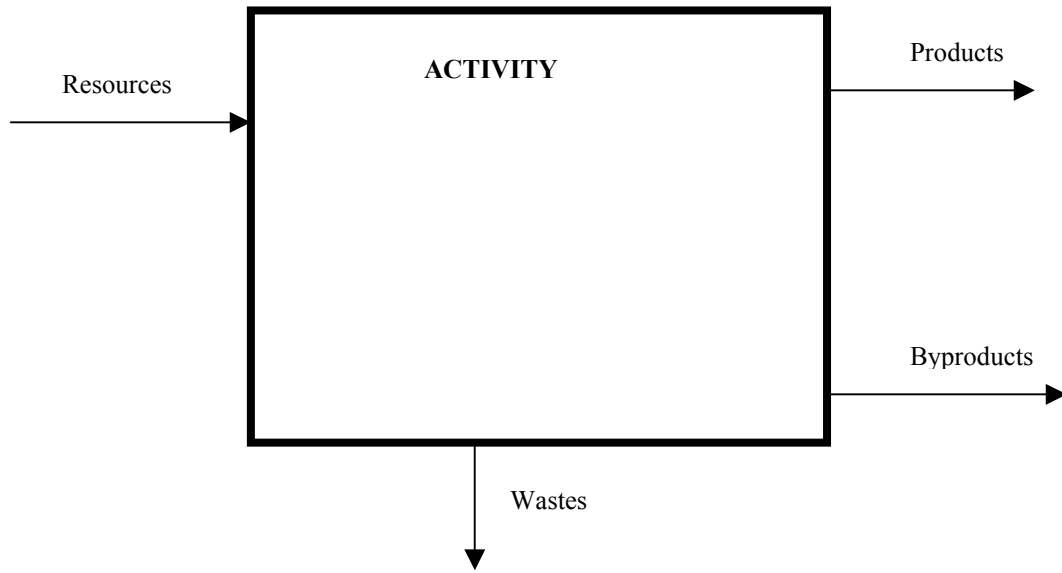
# ATTACHMENT A

## Wastewater Treatment Plant



# ATTACHMENT B

## INPUT/OUTPUT CHART



## **ATTACHMENT C**

### **BLANK ENVIRONMENTAL ASPECT CHART**







**Org/Operation:**  
**Aspects and Impacts Worksheet**

**Operation:**

Dept/Area/Operation	Activity	Environmental Aspects	Env. Impacts									Sig.		Operational Control(s)
			Changes Air Quality	Changes Water Quality	Direct exposure to agent	Changes Habitat	Nuisance (odor, etc.)	Depletes Natural Resource	Regulated?	Critical Control Point?	Frequency/Probability	Total Environmental Score	Significant?	
Ag Ops - Applying Kentorganite	Spreading of Kentorganite	Dust, odor, fuel, air pollution	3	1	3	2	4	3	5	3	4	28	Y	
Biosolids - Drying	Run scrubber	Air pollution, electricity, spills, leaks	4	2	1	1	3	2	5	3	5	26	Y	
Biosolids - Drying	Run boilers	Electricity, fuel, air pollution	4	1	1	1	2	3	5	3	5	25	Y	
Ag Ops - Applying Kentorganite	Spills of Kentorganite	Lime usage, fuel, solid waste, oils	4	1	5	0	5	0	5	3	1	24	Y	
Maintenance - Force Mains	Spill mitigation	Lime usage, fuel	2	3	4	3	3	3	5	0	1	24	Y	
Biosolids - Drying	Run dryers	Electricity, Dowtherm, spills, drums, leaks	4	1	2	1	1	2	5	3	5	24	Y	
Operations - Chlorine Addition	Connecting chlorine containers	Chlorine leak,	5	2	5	2	4	3	0	0	3	24	Y	
Maintenance - Pump Station	Spill mitigation	Lime usage, fuel	3	4	4	2	3	2	5	0	1	24	Y	
Operations - Air Compressors	Operating blowers	Electricity, air pollution, noise, fuel	4	4	1	1	3	5	0	0	5	23		
Operations - Laboratory	Sample Analysis	Electricity, fuel, chemicals, air pollution, solid and hazardous waste, water, paper, spills	2	3	4	0	2	3	0	3	5	22		
Maintenance - Pump Station	Emergency generator maintenance	Fuel, electricity, air pollution	4	1	1	1	3	2	5	0	3	20		
Biosolids - Dewatering	Preventive maintenance	Fuel, electricity, rags	2	1	3	2	4	2	0	3	3	20		
Maintenance - Safety	Confined Space entry	Electricity, air pollution, rags, fuel usage	3	2	4	1	4	3	0	0	3	20		
Operations - Aeration Basins	Air diffusing	Electricity, air, air pollution	4	2	0	0	2	4	0	3	5	20		
Ag Ops - Applying Kentorganite	Loading of Kentorganite	Fuel, dust, air pollution, odors, spills	3	1	2	0	4	3	0	3	4	20		
Ag Ops - Applying Kentorganite	Off loading Kentorganite	Dust, fuel, spills, air pollution	3	1	2	1	4	1	0	3	4	19		
Operations - Clarifiers	Emergency generator operations	Electricity, fuel, noise air pollution	3	1	0	0	1	1	5	3	5	19		
Operations - Sulfur Dioxide Addition	Connecting sulfur dioxide containers	Sulfur dioxide leak	3	1	4	2	3	3	0	0	3	19		

**Org/Operation:**  
**Aspects and Impacts Worksheet**

**Operation:**

Dept/Area/Operation	Activity	Environmental Aspects	Env. Impacts									Sig.	
			Changes Air Quality	Changes Water Quality	Direct exposure to agent	Changes Habitat	Nuisance (odor, etc.)	Depletes Natural Resource	Regulated?	Critical Control Point?	Frequency/Probability		
												Total Environmental Score	Operational Control(s)
Operations - Chlorine Addition	Monitoring/controlling chlorine addition	Chlorine leak,	4	1	4	1	2	2	0	0	5	19	
Operations - Chlorine Addition	Repairing chlorine equipment	Chlorine leak,	4	1	4	2	4	2	0	0	2	19	
Maintenance - Pump Station	Pump/Motor maintenance	Electricity, spills, rags	2	1	3	0	4	2	5	0	2	19	
Operations - Inflow	Odor scrubbing	Solid waste, electricity, water, chemicals	3	0	2	0	3	1	5	0	5	19	
Operations - Sulfur Dioxide Addition	Preventive maintenance	Sulfur dioxide leak	3	1	4	2	3	2	0	0	3	18	
Operations - Sulfur Dioxide Addition	Monitoring/controlling sulfur dioxide addition	Sulfur dioxide leak	3	1	4	1	2	2	0	0	5	18	
Maintenance - Pump Station	Bar screen maintenance	Electricity, fuel, landfill of waste grease and rags, air pollution	3	1	4	1	5	1	0	0	3	18	
Biosolids - Drying	Run scrubbers	Electricity, air pollution, spills, water	3	2	0	0	1	2	5	0	5	18	
Operations - Air Compressors	Emergency generator operation	Fuel, electricity, noise	2	2	0	0	1	2	5	3	2	17	
Operations - Air Compressors	Preventive maintenance	Electricity, solid waste	1	2	0	0	1	2	5	3	3	17	
Maintenance - Force Mains	Force main cleaning	Pig material, fuel, electricity, solid waste	2	2	4	2	3	2	0	0	2	17	
Operations - Chlorine Addition	Receiving chlorine containers	Leaking chlorine,	3	1	4	2	3	2	0	0	2	17	
Maintenance - Pump Station	Wetwell maintenance	Fuel usage, grease, landfill of rags, chemical usage, air pollution	3	2	4	1	4	1	0	0	2	17	
Operations - Chlorine Addition	Cleaning chlorine contact chamber	Chlorine, solid waste, skin contact	2	1	4	1	2	1	5	0	1	17	
Maintenance - Force Mains	Hydrogen peroxide operation	Chemical usage, air pollution, spills	1	1	2	1	1	3	5	0	3	17	
Operations - Clarifiers	RAS Pumping	Water, electricity	1	4	0	0	1	2	0	3	5	16	
Maintenance - Force Mains	Gravity/lateral inspection repair	Wastewater, spills, air pollution, fuel	1	2	4	2	3	2	0	0	2	16	
Operations - Sulfur Dioxide Addition	Receiving sulfur dioxide containers	Sulfur dioxide leak	3	1	3	2	3	2	0	0	2	16	
Maintenance - Force Mains	Sewer/ vacuum truck operation	Wastewater, spills, air pollution, fuel	3	2	3	1	3	2	0	0	2	16	
Maintenance - Force Mains	Air relief valves inspection and repairs	Fuel, air pollution, grease, rags, chemicals, lime	2	1	3	1	4	2	0	0	3	16	
Maintenance - Pump Station	Air scrubber maintenance	Electricity, carbon, spills	1	1	2	1	2	1	5	0	3	16	

**Org/Operation:**  
**Aspects and Impacts Worksheet**

**Operation:**

Dept/Area/Operation	Activity	Environmental Aspects	Env. Impacts										Sig.		Operational Control(s)
			Changes Air Quality	Changes Water Quality	Direct exposure to agent	Changes Habitat	Nuisance (odor, etc.)	Depletes Natural Resource	Regulated?	Critical Control Point?	Frequency/Probability	Total Environmental Score	Significant?		
Ag Ops - Building and Grounds	Herbicide application	Fuel, chemical, solid/hazardous waste, water, spills	2	2	2	3	0	1	5	0	1	16			
Operations - Aeration Basins	Preventive maintenance	Electricity, solid waste, fuel	1	1	5	0	1	1	0	3	3	15			
Maintenance - Pump Station	Process controls/SCADA	Electricity, water, rags	1	1	2	0	3	1	0	3	4	15			
Operations - Clarifiers	WAS Pumping	Water, electricity	1	3	0	0	1	2	0	3	5	15			
Pretreatment	Take samples	Spills of samples, waste paper due to chain of custody forms	0	1	1	0	0	0	5	3	5	15			
Maintenance - Pump Station	Bypass/Godwin Tanking	Spills, fuel usage, water transportation, electricity, air pollution	2	3	3	0	3	2	0	0	2	15			
Maintenance - Safety	Trench digging	Electricity, air pollution, rags, fuel usage, spills, contaminated water	2	1	4	2	3	1	0	0	2	15			
Operations - Clarifiers	Tank cleaning	Wastewater, fuel, electricity	3	3	4	0	2	2	0	0	1	15			
Biosolids - Dewatering	Run belt presses, conveyors	Electricity, water, spills, trash, belts	3	1	1	0	1	0	0	3	5	14			
Operations - Inflow	Filter screening	Solid waste, electricity, water	1	3	1	0	3	1	0	0	5	14			
Operations - Aeration Basins	Skimming floatable	Solid waste, fuel	0	3	2	0	3	1	0	0	5	14			
Pretreatment	Review Camera and Card Key Results	Fuel related to transportation to pump station sites, air pollution from vehicles	2	1	1	0	0	0	5	0	5	14			
Biosolids - Drying	Move Kentorganite	Fuel, air pollution, oil	2	1	1	1	0	1	0	3	4	13			
Biosolids - Dewatering	Dose ferric chloride	Electricity, spills, waste ferric chloride	1	1	3	0	0	0	0	3	5	13			
Biosolids - Dewatering	Convey cake to dryers	Electricity, wash down water, spills	2	1	1	0	1	0	0	3	5	13			
Operations - Grit Removal	Removal of grit	Solid waste, electricity, fuel	1	2	1	0	3	1	0	0	5	13			
Ag Ops - Fueling Operations	Filling fuel tanks	Air pollution, spills, electricity	2	1	2	1	2	2	0	0	3	13			
Pretreatment	Transport Sample	Fuel related to transportation, potential spills, air pollution from vehicles	2	1	1	0	0	0	0	3	5	12			
Biosolids - Drying	Run conveyors	Electricity, wash down water, spills	1	2	0	0	1	0	0	3	5	12			
Biosolids - Dewatering	Mix polymer and Dose biosolids	Electricity, spills, trash, waste chemicals	1	1	2	0	0	0	0	3	5	12			
Pretreatment	Issue SIU Permits	Generate paper and waste paper, electricity and ink for computers	1	0	0	1	0	1	5	3	1	12			
Operations - Grit Removal	Preventive maintenance	Solid waste, electricity	0	1	1	0	0	1	0	3	5	11			
Maintenance - Safety	Outside contractors	Electricity, fuel, spills, air pollution	1	1	2	1	3	1	0	0	2	11			
Ag Ops - Vehicle Maintenance	Service vehicles	Air pollution, rags, paper, electricity, spills, solid waste	1	1	1	0	1	3	0	0	4	11			
Ag Ops - Building and Grounds	Pesticide application	Fuel, chemicals, water, solid/hazardous waste, spills	2	2	2	3	0	1	0	0	1	11			
Operations - Inflow	Preventive maintenance	Solid waste, electricity	0	2	1	0	0	1	0	3	3	10			
Maintenance - Force Mains	Preventive maintenance	Electricity, oil and grease rags, fuel	1	1	1	1	1	1	0	0	4	10			
Operations - Inflow	Scum removal	Solid waste, electricity, water, chemicals	1	1	1	0	1	1	0	0	5	10			
Operations - Clarifiers	Flow balancing	Electricity, air pollution	1	2	0	0	1	1	0	0	5	10			
Operations - Laboratory	Sampling	Fuel, electricity	0	0	3	0	1	1	0	0	5	10			
Ag Ops - Fueling Operations	Fueling vehicles	Air pollution, spills, electricity, paper	2	1	1	0	1	2	0	0	3	10			

**Org/Operation:**  
**Aspects and Impacts Worksheet**

**Operation:**

Dept/Area/Operation	Activity	Environmental Aspects	Env. Impacts									Sig.	Operational Control(s)
			Changes Air Quality	Changes Water Quality	Direct exposure to agent	Changes Habitat	Nuisance (odor, etc.)	Depletes Natural Resource	Regulated?	Critical Control Point?	Frequency/Probability	Total Environmental Score	
Operations - Chlorine Addition	Preventive maintenance	Chlorine	2	0	1	1	1	1	0	0	3	9	
Administration	HVAC of Buildings	Fuel, electricity	3	1	0	0	0	2	0	0	3	9	
Operations - Sulfur Dioxide Addition	Repairing sulfur dioxide equipment	Sulfur dioxide leak	2	0	1	1	1	1	0	0	2	8	
Pretreatment	Conduct public relations	Fuel related to transportation to sites, air pollution from vehicles, waste paper, electricity and ink for computers	2	0	1	1	0	1	0	0	3	8	
Pretreatment	Sample Haulers	Fuel related to transportation, potential spills, air pollution from vehicles	2	1	1	0	0	0	0	0	4	8	
Pretreatment	Analyze Samples	Waste paper, electricity and ink for computers	1	0	0	1	0	1	0	0	5	8	
Ag Ops - Applying Kentorganite	Delivering Kentorganite	Fuel, air pollution, spills, dust	2	1	0	0	1	0	0	0	4	8	
Biosolids - Drying	Preventive maintenance	Fuel, electricity, rags	1	1	0	0	1	1	0	0	3	7	
Pretreatment	Administer Program	Waste paper, electricity and ink for computers	1	0	0	1	0	1	0	0	4	7	
Ag Ops - Applying Kentorganite	Public relations	Fuel, paper	2	0	1	0	0	0	0	0	4	7	
Ag Ops - Vehicle Maintenance	Heat shop	Air pollution, electricity, LP gas	1	0	0	0	1	2	0	0	3	7	
Pretreatment	Set up samples	Wash jars and samplers, add preservatives, potential spills of preservatives	1	2	1	0	1	0	0	0	1	6	
Maintenance - Safety	Rigging and Bracing Operations	Electricity, spills, grease, oil, rags	1	0	2	0	0	1	0	0	2	6	
Operations - Clarifiers	Preventive maintenance	Electricity, fuel, solid waste	0	2	1	0	0	1	0	0	2	6	
Maintenance - Pump Station	Preventive maintenance	Electricity, fuel, oil, grease, chemical usage, air pollution	0	0	1	0	1	1	0	0	3	6	
Ag Ops - Building and Grounds	Yard work	Fuel, solid waste, spills	0	0	0	2	0	1	0	0	3	6	
Biosolids - Dewatering	Monitoring of flow/pH	Paper	0	0	0	0	0	1	0	0	5	6	
Ag Ops - Applying Kentorganite	Weighing of Kentorganite	Fuel, air pollution, paper	1	0	0	0	1	0	0	0	4	6	
Pretreatment	Permit Haulers	Waste paper, electricity and ink for computers	1	0	0	1	0	1	0	0	2	5	
Operations - Laboratory	Preventive maintenance	Chemical usage, air pollution, spills, solid waste	0	0	1	0	0	1	0	0	3	5	
Administration	Maintaining files, etc.	Paper, electricity	0	0	0	0	0	2	0	0	3	5	
Ag Ops - Building and Grounds	Building maintenance	Fuel, electricity, solid waste, chemical usage	0	0	0	0	0	1	0	0	4	5	
Ag Ops - Fueling Operations	Spill cleanup	Air pollution, rags, paper, absorbent	1	1	1	0	1	0	0	0	1	5	
Ag Ops - Vehicle Maintenance	Change parts	Electricity, rags, paper	0	0	1	0	0	1	0	0	3	5	
Ag Ops - Building and Grounds	Snow removal	Fuel, salt/sand mixtures, spills	0	0	0	0	0	3	0	0	1	4	

## RIVANNA SEWER AND WATER AUTHORITY – CHARLOTTESSVILLE, VIRGINIA

### 8.3 Sample of Environmental Aspect, Impact Identification, and Ranking

<i>Operation: Compost Yard</i>	Activity	Aspect	Env. Impact	Regulated?	Severity of Impact	Duration of Impact	Release to Environment (Air, Worker Exposure)	Public Perception	Total	Significant?	Operational Control(s)	
	Drying w/ blowers	Fuel/electricity consumption, air emissions, solid waste generation	Depletion of natural resources, degradation of air quality, landfill space	N	1	3	1	1	1	7	N	

### 8.4 Significant Environmental Aspects (Currently for Moores Creek Wastewater Treatment Plant)

Activity	Aspect	Environmental Impact	Operational Control(s)
Wastewater Treatment (Digestion/Flares, Thickening; Screening/grit removal, Primary treatment, clarification, grease removal; Filter press); Compost; Septage Receiving; Rivanna Pump Station Use & Maintenance	Odors	Nuisance	Odor Control Plan (Under Development)
Septage Receiving	Potential spills/Runoff/Release	Degradation of water quality	VPDES Permit; SPCC Plan; Stormwater Discharge Permit and Pollution Prevention Plan
Pretreatment	Chemical addition	Degradation of water quality	
Chemical handling (receiving)	Potential spills	Water, soil degradation	SPCC Plan; Stormwater Discharge Permit and Pollution Prevention Plan
Wastewater Treatment/Effluent	Water release	Modification of water quality	VPDES Permit
Wastewater collection, transport, and pump (within Plant)	Possible overflows	Degradation of water and soil quality, natural resource depletion, nuisance	
Office Administration--Paper & office supplies use; Recycling; Contract management; Procurement	energy consumption, Solid waste	Landfill use, natural resource depletion	Standard contract language; Recycling Plan; Procurement Policy (all under development)

# **SAMPLE EMS DOCUMENTATION**

## ***OBJECTIVES AND TARGETS***



***City of Gastonia WWTP – Objectives and Targets Procedure***

***City of Charleston CPW – Objectives and Targets***

***City of Eugene WWTP – Objectives and Targets***

***City of Gastonia WWTP – Objectives and Targets***

***Kent County DPW – Procedure and Objectives and Targets***

***Buncombe County MSD – Objectives and Targets***



<b>Standard Operating Instruction – EMS-0100.007</b> <b>Name: Objectives and Targets Procedure</b>	<b>Corresponding Requirements:</b> EMS Manual: 4.3.3 ISO Standard: 4.3.3 NBP Element: 5
Prepared By: Beth Eckert, Environmental / Administrative Manager	Revision Date: 02/13/03 Revision #: 3
Approved By: Beth Eckert, Environmental / Administrative Manager	Effective Date: 03/01/01
Signature:	Page 1 of 3

## Objectives and Targets Standard Operating Procedure

### 1.0 Purpose

- 1.1 The following procedure provides guidance for the development and review of objectives and targets, and associated improvement programs for the Wastewater Treatment Division.

### 2.0 Associated Equipment

- 2.1 None

### 3.0 Associated Reference Material

- 3.1 **City of Gastonia** – *Environmental Management System Manual (EMS-0100.000)*
- 3.2 **ISO 14001 Standard:** *ANSI/ISO 14001-1996 Environmental Management Systems – specifications with guidance for use.*
- 3.3 **National Biosolids Partnership (NBP)**– *Elements of an Environmental Management System for Biosolids*
- 3.4 **Objective and Targets Improvement Plan Summary** – EMS-0102.007
- 3.5 **Improvement Program** – EMS-0101.007A-Program ID#
- 3.6 **Significant Environmental Aspects** – EMS-0101.003D-year-revision#

### 4.0 Procedure

- 4.1 The WWTD will establish and/or revise an objectives and targets list annually, by April 1<sup>st</sup> of each year, by considering at least the following information:
  - 4.1.1 Legal and other requirements
  - 4.1.2 Significant environmental aspects and impacts and critical control points for the current year – EMS-0101.003D-year-revision#
  - 4.1.3 Prevention of pollution
  - 4.1.4 Product Quality
  - 4.1.5 Technological options
  - 4.1.6 Financial, operational, and business requirements
  - 4.1.7 NBP – Code of Good Practice

- 4.1.8 Good Neighbor Policy
- 4.1.9 Authoritative information sources on relevant topics (i.e. WEF Manuals of Practice)
- 4.1.10 WWT environmental policy
- 4.1.11 Views of interested parties – Management Review Board quarterly reports and External communication log books
- 4.1.12 Progress reports on the previous years objectives and targets
- 4.2 Objectives and targets may also be amended at other times during the year as a result of new or revised operations, activities, and/or regulations.
- 4.3 When there are projects that relate to new developments and new or modified activities, products or services; the program shall be amended where relevant to ensure that environmental management applies to such projects.
- 4.4 Objectives and Targets may be removed from a current list by the Management Review Board (MRB) if circumstances surrounding an objective and target change during the year.
  - 4.4.1 This removal shall take place following a review of its technological and/or economical feasibility by the Division Manager WWT and/or either of the two Assistant Managers. This change shall be documented and explained in a C/PAR.
- 4.5 Each Objective and Target will be assigned a unique program ID # and an Improvement Plan (EMS-0101.007A – Program ID#) will be developed.
  - 4.5.1 This program shall include:
    - 4.5.1.1 Designation of responsibility for achieving the objectives and targets at each relevant function and level of organization;
    - 4.5.1.2 Means and time-frame by which they are to be achieved.
- 4.6 The Objective and Target Improvement Summary (EMS-0102.007) and each Improvement Plan must be approved by the Division Manager WWT and budgeting provisions made, where necessary, to accomplish the stated objectives and targets.
- 4.7 The EMS Coordinator, or designee, is responsible for their maintenance and facilitating their reporting to the Management Review Board (MRB).

**5.0 Revision History:**

Revision		C/PAR #	Reason for Revision	Description of Revision
Date	#			
5/20/02	1	EMS-0074	External Auditor	Removal of Deviations statement from Level II procedures
5/20/02	1	EMS-0084	C/PAR	Added a modification history section
8/7/02	2	EMS-0116	C/PAR	Incorporated in NBP requirements for element 5 and the NBP element reference for document control linkage as required in revision 5 of the document control procedure
2-13-03	3			Converted Form #: EMS-0101.007 to Reference Chart #: EMS-0102.007. <b>NO TRAINING REQUIRED</b>

## Environmental Management System Summary of Objectives and Targets

- Record File/Retrieval ID (Optional):
- Record Schedule No./Retention Period:
- Page 1 of 3

Prepared by: WWCD EMS Progress Team / Senior Supervisors

Approved by/Date: A. Williams / Feb. 9, 2004

**Purpose/Scope:** To identify and communicate environmental objectives and targets based upon consideration of CPW's analysis of operational requirements, significant environmental impacts, regulatory standards and compliance, technological options, financial resources, the views of interested parties and the strategic business plan.

**Instructions:** Each CPW department and/or group having been identified by the P2 Team, as having significant environmental impacts (and/or impacts which management requires departments to track), shall complete this form. This form is to be updated annually (and retained as a departmental record) and updated thereafter when modifications and/or changes occur in CPW activities, products, and/or services. Results of the activities listed below are to be reported as they occur in the departments Monthly Operating Report (MOR). **Note:** This form may be replicated on a computer or duplicated on a photocopier. The computer copy must look similar to this document and contain the same information.

Aspect Item	Specific Negative Impact (Enter a brief description.)	Objective & Target ID/No.	Objective	Target/Performance Indicator	Performance Record
Sewer System Overflows (Significant Aspect)	Contamination of environment	IP-2004.01 (System Cleaning Program)	Reduce the number of sewer system overflows by systematically cleaning designated mainlines.	Clean 556,200' (46,350' monthly ave.) of wastewater collection mainlines on problem and high- risk areas through the 2004-CY. (Ronald Inabinet)	WWCD Monthly Operating Report; Work Orders
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.02 (Closed-circuit Television Inspection Program)	Acquire system condition and critical data for proper asset management.	Perform CCTV inspections on 288,000' (24,000' monthly ave.) on the collection system through the 2004-CY. (Franklin Yates)	WWCD Monthly Operating Report; Inspection reports
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.03 (Mainline Rehab Program)	Rehabilitate existing mainlines to prolong their life and increase efficiency.	Rehab 8000' of wastewater collection mainlines by October 31, 2004. (Franklin Yates)	WWCD Monthly Operating Report
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.04 (Lateral Lining Process)	Rehabilitate laterals utilizing the Cured in Place Process (CIPP).	Rehabilitate 65 laterals using the CIPP process. Complete by Oct. 31, 2004. (Tony Coker)	WWCD Monthly Operating Report; Work orders
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.05 (Infrastructure Repair Program)	Repair defects in the collection system possibly contributing to inflow & infiltration (I & I).	Perform 540 (45 ave. per month) various point and service repairs for 2004-CY. (Tony Coker)	WWCD Monthly Operating Report; Work orders

## Objectives and Targets - Continuation Sheet

This sheet may be used as an attachment to the EMS Objectives and Targets form when additional space is required.

**NOTE:** This form may be replicated on a computer or duplicated on a photocopier. The computer copy must look similar to this document and contain the same information.

- Record File/Retrieval ID (Optional):
- Record Schedule No./Retention Period:
- Page 2 of 3

Aspect Item	Specific Negative Impact (Enter a brief description.)	Objective & Target ID/No.	Objective	Target/Performance Indicator	Performance Record
Preventive Maintenance	Potential problems with equipment operation resulting in backups and SSOs	IP-2004.06 (Valve Exercising Program)	Ensure all critical valves are in good operation should an emergency occur.	Develop a valve-exercising program. Include drawings delineating valves to operate, SOI(s) & schedule(s). Establish program by May 1, 2004. (Harry McGee)	WWCD Monthly Operating Report; Associated drawings (GIS); Standard Operating Instruction(s); CityWorks scheduling via work orders
Exfiltration	Contamination of waterways	IP-2004.07 (Water Quality Assurance Program)	Identify leaks in collection system resulting in the potential contamination of waterways.	Identify locations where wastewater mains cross waterways and create a GIS map of those locations. Complete by May 1, 2004. Develop an inspection schedule and create work orders in the CMMS by October 31, 2004. (Gregory Daniels)	WWCD Monthly Operating Report; Standard Operating Instruction(s); Work Orders
Emergency Preparedness/ Response	Increased potential for damage to infrastructure, equipment and environment	IP-2004.09 (Flow Control Program)	Develop procedures for redirecting flows during emergency situations.	Develop a flow control program involving valves associated with force mains. Include drawings delineating valves to operate during specified emergencies. Finalize by July 1, 2004. (Harry McGee)	WWCD Monthly Operating Report; Associated drawings (GIS); Standard Operating Instruction(s)
Computerized Maintenance Management System (CMMS)	Potential for maintenance activities to be incomplete; loss of permanent records	IP-2004.10 (Asset Management and Evaluation Program)	Develop a system for evaluating the infrastructure for prioritizing rehabilitation initiatives.	Develop an asset management/evaluation program to include the production of reports identifying system rehabilitation priorities. Accomplish by July 1, 2004. (Chris Hendricks)	WWCD Monthly Operating Report; Standard Operating Instruction(s); Associated standard reports
Training	Lack of intellectual capital with regard to environmental and	IP-2004.11 (Skills-based Training)	Establish improved controls regarding training	Establish procedures & reports for managing the SBT Training database. Accomplish by July 1,	WWCD Monthly Operating Report; Standard Operating

## Objectives and Targets - Continuation Sheet

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- Record File/Retrieval ID (Optional):
- Record Schedule No./Retention Period:
- Page 3 of 3

Aspect Item	Specific Negative Impact (Enter a brief description.)	Objective & Target ID/No.	Objective	Target/Performance Indicator	Performance Record
	operational effectiveness	Improvement Program)	management.	2004. (Susan Roberts)	Instruction(s); Standard training management reports
Operational Evaluations	Improper evaluations resulting in unqualified rehabilitation planning	IP-2004.12 (Pump Station Operational Evaluation Program)	Develop methodologies & criteria for establishing pump station rehabilitation priorities.	Develop formal, logical criteria for determining schedules for pump station rehabilitation. Complete by Aug. 1, 2004. (Harry McGee)	WWCD Monthly Operating Report; Grading Criteria Worksheet; Schedules (if needed)
Air Release Valve PM	Loss of operational & design effectiveness of force mains & pump stations; exfiltration	IP-2004.13 (Air Release Valve PM Program)	Ensure air release valves are working properly.	Establish an air release valve inspection and maintenance program. Complete by Aug. 1, 2004. (Ronald Inabinet)	WWCD Monthly Operating Report; Standard Operating Instruction(s); Inspection and PM schedule
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.14 (I & I Reduction Plan)	Establish a standard methodology for mitigating I & I	Develop a manual and/or SOI(s) for I & I reductions. Include a structured, comprehensive approach to I&I reduction within the document(s), and complete by Sept. 1, 2004. (Franklin Yates)	WWCD Monthly Operating Report; Standard Operating Instruction(s); I & I Manual (if necessary)
Computerized Maintenance Management System (CMMS)	Potential for maintenance activities to be incomplete; loss of permanent records	IP-2004.15 (CMMS Phase-in Project)	Encompass all aspects of operations within CMMS.	Phase-in all Technical Section operations into CityWorks CMMS program by Oct. 1, 2004. (Chris Hendricks)	WWCD Monthly Operating Report; CityWorks technical work orders


Note: Identification number IP-2004.08 was purposely not used to maintain numbering consistency with the Departmental Incentives.

# City of Eugene – Wastewater Division

## Environmental Management System

### 2004 Objectives and Targets

Objective	Target
Reduce Consumption of Natural Resources	Improve the fuel efficiency of the Division's fleet (gasoline and diesel vehicles)
	Increase the amount of non-petroleum-based fuels by the Division's fleet
Reduce Power Consumption	Reduce annual electrical power consumption of WPCF by 5% (Baseline 2000)
	Improve the electrical efficiency of the Division's pump stations
	Reduce annual electrical power consumption of BMF (measured as kwh/dry ton biosolids produced) by 5% (Baseline 2002)
Reduce Solid Waste	Minimize quantities of non-recyclable wastes (Excluding grit truck waste and dewatering press screenings)
	Minimize recyclable wastes from solid waste disposal sent to landfill
	Reduce total solid waste (tons) by 15% based on cubic yards taken to landfill (Baseline 2002)
Improve Quality of Treated Wastewater Effluent	Reduce wastewater facility influent mercury loading by 10% (Baseline summer 2001)
Reduce use of Toxic Chemicals	Perform chemical assessment and prioritization for reduction
Reduce Air Pollution	Reduce sulfur dioxide emissions (lbs) from the engine generator by 85% (Baseline 2002)
Reduce Potable Water Use	Reduce potable water use (gallons) by 10% (Baseline 2002)

<div> City of Gastonia    Wastewater Treatment </div>	<b>Corresponding Requirements:</b>  <b>EMS Manual:</b> 4.3.3 and 4.3.4 <b>ISO Standard:</b> 4.3.3 Objectives and Targets and 4.3.4 Environmental Management Programs <b>NBP Element:</b> 5  <b>Corresponding procedures:</b> EMS-0100.007 & Individual improvement programs listed below		<b>2003 Environmental Objectives &amp; Targets Improvement Plan Summary</b>		
	<b>Document No:</b> EMS-0102.007 <b>Purpose:</b> To establish a summary of objectives and targets for prevention of pollution and for continual environmental improvement through specific programs.	Revision#: 2  Revision Date: 10/21/03	Revised By: David Shellenbarger, Asst. Div. Manager - Compliance  Approved By: Larry Cummings, Division Manager WWT  Signature: _____ Page 1 of 1		
Program # & Name	Policy / Aspect Item	Specific Negative Impacts	Objective	Target	Performance Indicator
EMS-2001-001 <b>Electrical Usage</b>	Pollution Prevention - More efficient use of electrical resources	drain on natural resources	Make incremental improvements in the efficient use of electrical energy.	Reduce electrical usage/gallon treated by 5% at each WWTP by 12/31/03	Quarterly review electrical costs at each plant during MRB.
PRE-2001-001 <b>Oil &amp; Grease</b>	Pollution Prevention	surface water quality; public relations	Develop and implement an improved oil and grease program for the City of Gastonia	Complete public education and implement fat, oil & grease program and inspect all identified restaurants by December 2004.	Quarterly review of progress with Management during the MRB.
WWEMS-2002-001 <b>Biosolids Management Study</b>	Continual Improvement	ground water quality, legal requirements.	To perform thorough evaluation and assessment both intermediate and long term plans for the City's residuals management needs, by performing a system wide master plan study, adopting a National Biosolids Partnership EMS, and contracting professional services consultants to evaluate any remaining needs identified by first two steps.	Complete thorough evaluation and assessment of biosolids area by July 2004.	Quarterly review of progress with Management during the MRB.
WWEMS-2002-002 <b>Augmented Training Program</b>	Continual Improvement	surface water quality; ground water quality, air quality, natural resource use, state regulations	To modify current training processes to better ensure extensive knowledge of the trainers, comprehensiveness of topics trained upon and thorough review of effectiveness of training.	Identify areas for improving training in Division and provide sufficient training in identified areas to employees by June 2006.	Quarterly review of progress with Management during the MRB.
WWEMS-2002-004 <b>National Biosolids Partnership EMS</b>	Continual Improvement	ground water quality, legal requirements.	To successfully implement the National Biosolids Partnership program into our existing environmental management system and achieve certification for NBP EMS while maintaining ISO 14001 certification.	Receive outside certification of NBP EMS by February 2005.	Quarterly review of progress with Management during the MRB.
WWEMS-2002-005 <b>Master Plan Study</b>	Continual Improvement	surface water quality; ground water quality, air quality, natural resource use, state regulations	To perform a broad and thorough evaluation of the wastewater collection and treatment systems and determine what overall direction should be pursued and where improvements should be made.	Complete master plan study of wastewater system by December 2003.	Quarterly review of progress with Management during the MRB.
WWEMS-2003-003 <b>Disposal of Water Plant Residuals</b>	Pollution Prevention, Improved Biosolids Quality	soil & ground water quality, state regulations	Improve the quality of biosolids generated in Gastonia's program and limit their effect on the environment through landfill disposal of water treatment plant residuals.	Arrange for dewatering and land application of water plant residuals. Begin disposal by December 31, 2003	Quarterly review of progress with Management during the MRB.



<b>Kent County Dept. of Public Works Dover, Delaware</b>	<b>Title: Setting and Tracking Objectives and Targets</b>		
	Document No.:	Date Effective:	Page:
<b>Environmental Procedures Manual</b>	<b>2-04-P01</b>	<b>11-01-2003</b>	<b>1 of 6</b>
<b>Objectives and Targets</b>	Prepared By: <b>Jim Newton</b>	Approved By:	Revisions No.: <b>0</b>

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### **1.0**    **PURPOSE**

- 1.1    The purpose of this procedure is to establish the general requirements for the work process of setting and tracking EMS objectives and targets based upon significant environmental aspects that are applicable to the Kent County Dept. of Public Works Regional Wastewater Treatment Facility.
- 1.2    The purpose of this work process is to establish the Kent County Dept. of Public Works specification for setting and tracking EMS objectives and targets that apply to the facility to facilitate compliance with the applicable requirements.

### **2.0**    **SCOPE**

- 2.1    This procedure addresses the setting and tracking of EMS objectives and targets applicable to the Kent County Dept. of Public Works Environmental Program.

### **3.0**    **DEFINITIONS**

- 3.1    *Activity* – Something that occurs at the wastewater facility in order to transport wastewater, produce clean wastewater or produce quality biosolids (Kentorganite).
- 3.2    *Baseline* – The starting point from which the meeting of an objective is to be measured, such as the number of kilowatt hours of electricity used to run the basin blowers for 2002.
- 3.3    *Objective* – An overall goal, arising from the environmental policy and the list of significant environmental aspects and critical control points, that an organization sets itself to achieve. An example would be to reduce energy consumption across the facility.
- 3.4    *Target* – a measurable performance requirement that arises from an objective. An example would be to reduce energy consumed by the biosolids dryers by 10% by January 2005.

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#### **4.0    REFERENCES**

- 4.1    Kent County Dept. of Public Works Environmental Management System Program Manual

#### **5.0    REQUIREMENTS**

##### *5.1    Identifying Objectives*

- 5.1.1.    The Core Team will evaluate the list of significant environmental aspects and critical control points generated under Environmental Management System Procedure 2-04-P01 for areas of commonality.
- 5.1.2    A list of objectives will be prepared by the Environmental Management System Representative to address the general common significant environmental aspects and critical control points, and compared to the environmental/biosolids policy. The objectives would be agreed to by the Core Team and posted on the Public Works website.

##### *5.2    Identifying Targets*

- 5.2.1    The Core Team will evaluate the selected objectives and determine the tasks required to meet each objective. The Core Team will assign target dates and responsible parties to ensure that the dates are met. The Core Team will communicate the selected objectives and targets with senior management to ensure that adequate resources and support is available to accomplish the required elements.
- 5.2.2    A table will be prepared for each objective with all target activities, dates and responsible parties listed. This table will be posted on the Public Works website and maintained by the Environmental Management System representative.

##### *5.3    Tracking Objectives and Targets*

- 5.3.1    The Core Team will evaluate each objective and compare key objective and target actual accomplishments with the planned program on a quarterly basis.
- 5.3.2    The Core Team will revise the objectives and targets, as necessary, to ensure that movement is continuing to be made towards completion.
- 5.3.3    Management will review the objectives and targets annually, and recommend changes based upon their review.

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## **6.0     RESPONSIBILITIES**

- 6.1     The EMS Core Team shall develop the objective and targets based upon the significant environmental aspects and critical control points developed under Environmental Management System Procedure 2-04-P01.
- 6.2     The Core Team shall prepare a list of target activities and determine appropriate baseline information in order to meet selected objectives.
- 6.3     The Environmental Management System Representative shall maintain and post the list of objectives and target activities, dates and responsible persons.
- 6.4     The Core Team shall conduct a quarterly progress evaluation and make modifications as necessary to selected objectives and targets.
- 6.5     Senior management shall conduct an annual review of selected objectives and targets, and provide necessary resources to ensure that they are met.

## **7.0     DOCUMENTS**

### **7.1     *Related Documents***

None

### **7.2     *Document Control***

This procedure shall be controlled in accordance with the Environmental Management System Procedures 2-12-P01, Controlling Documents. Maintaining this Procedure is the responsibility of the *Environmental Program Manager* to facilitate retrievability of the documents and up-to-date information.

## **8.0     RECORDS**

### **8.1     *Required Records***

The list of activities; the list of aspects, and the priority list of aspects shall all be maintained as appendices to this procedure.

### **8.2     *Records Control***

All records, if required, pertaining to this procedure shall be controlled in accordance with the Environmental Management System Procedures 2-11-P02, Controlling Records.

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## 9.0 ATTACHMENTS

There are no attachments to this procedure.

## 10.0 APPENDICES

10.1 Appendix A – List of selected objectives and targets currently being addressed by the EMS.

## 11.0 REVISION HISTORY

Revision No.	Effective Date	Responsible Person	Description of Revision	Appv. By
0		Jim Newton	Initial Issue	

<b>Kent County Dept. of Public Works Dover, Delaware</b>	<b>Title: Setting and Tracking Objectives and Targets</b>		
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## **Appendix A**

**List of selected objectives and targets currently being addressed by the EMS.**



**2003-2004 Objectives and Targets Table**

Objective	Target	Significant Aspects and CCPs Addressed	Environmental Management Program	Proposed Date	Date Completed
Reduce air pollution	Reduce sulfur, particulate and CO emissions by 50% from CY 2002 levels	1,2,3,6,8		June 30, 2005	
			Replace 75% of diesel usage with biodiesel in operating equipment	June 30, 2005	
			Replace emergency generator diesel fuel with biodiesel	June 1, 2004	
			Get DNREC to agree to use alternative electricity operation	December 1, 2004	
Reduce energy consumption	Reduce electricity usage by 20% from CY 2002 levels	1,2,3,6	Replace dryer diesel fuel with bio-fuel made from grease trap waste or biodiesel	June 1, 2006	
Reduce or eliminate effects of chlorine and sulfur dioxide	Improve safety of existing processes or switch to an alternative disinfection method	7		December 31, 2005	
			Enroll in EPA Green Lights program	June 30, 2004	
			Get DNREC to agree to use alternative electricity operation	December 31, 2004	
			Upgrade to more energy efficient pumps, lights, etc.	December 31, 2005	
			Seek renewable energy alternatives such as wind	December 31, 2006	
				June 30, 2009	
			Evaluate chlorine hazard potential	September 30, 2004	
			Hire consultant to look at cost effective alternatives	December 31, 2004	
			Develop plans for alternatives or ways to improve safety of current systems	June 30, 2006	
Reducing sanitary sewer overflows (a.k.a. spills)	Reduce SSOs by 40% form CY 2002 levels	2,4,5,8	Budget finances	November 30, 2006	
			Secure financing	July 1, 2007	
			Construct	December 31, 2008	
			Operate	June 30, 2009	
				June 30, 2005	
			Develop system to document sources of SSOs	June 30, 2004	
			Implement FOG program	December 31, 2004	
			Develop action plans to reduce or eliminates SSOs	December 31, 2004	
			Develop CMOM program	June 30, 2005	

**MSD – Buncombe County**  
**EMS Environmental 2004 Objectives & Targets**

Objective	Target	Baseline	Target	Objective Owner	Legal/ Other Requirements	Significant Aspect	Technological Options	Financial, & Operational	Business Goals	Interested Parties
Sludge Handling Improvements	Install new belt filter presses, new refractory and heat exchanger by August 2004	NA	NA	John Kiviniemi	×	✓	✓	✓	✓	×
Research Lagoon material placement alternatives.	Restore lagoon to originally intended use and ash disposal only by December 2005	NA	NA	John Kiviniemi	✓	✓	✓	✓	✓	✓
Septage Receiving Station	Construct by December 2004	N/A	N/A	John Kiviniemi	✓	×	✓	✓	✓	✓
Vulnerability Assessment	Complete Assessment Review by July 2004	N/A	N/A	John Kiviniemi	✓	×	×	✓	✓	✓



**SAMPLE EMS DOCUMENTATION**

***ENVIRONMENTAL MANAGEMENT PROGRAMS***



***Charleston CPW – WWCD Improvement Plan***  
***Charleston CPW – System Cleaning Program***

## Environmental Management System Summary of Objectives and Targets

- Record File/Retrieval ID (Optional):
- Record Schedule No./Retention Period:
- Page 1 of 3

Prepared by: WWCD EMS Progress Team / Senior Supervisors

Approved by/Date: A. Williams / Feb. 9, 2004

**Purpose/Scope:** To identify and communicate environmental objectives and targets based upon consideration of CPW's analysis of operational requirements, significant environmental impacts, regulatory standards and compliance, technological options, financial resources, the views of interested parties and the strategic business plan.

**Instructions:** Each CPW department and/or group having been identified by the P2 Team, as having significant environmental impacts (and/or impacts which management requires departments to track), shall complete this form. This form is to be updated annually (and retained as a departmental record) and updated thereafter when modifications and/or changes occur in CPW activities, products, and/or services. Results of the activities listed below are to be reported as they occur in the departments Monthly Operating Report (MOR). **Note:** This form may be replicated on a computer or duplicated on a photocopier. The computer copy must look similar to this document and contain the same information.

Aspect Item	Specific Negative Impact (Enter a brief description.)	Objective & Target ID/No.	Objective	Target/Performance Indicator	Performance Record
Sewer System Overflows (Significant Aspect)	Contamination of environment	IP-2004.01 (System Cleaning Program)	Reduce the number of sewer system overflows by systematically cleaning designated mainlines.	Clean 556,200' (46,350' monthly ave.) of wastewater collection mainlines on problem and high- risk areas through the 2004-CY. (Ronald Inabinet)	WWCD Monthly Operating Report; Work Orders
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.02 (Closed-circuit Television Inspection Program)	Acquire system condition and critical data for proper asset management.	Perform CCTV inspections on 288,000' (24,000' monthly ave.) on the collection system through the 2004-CY. (Franklin Yates)	WWCD Monthly Operating Report; Inspection reports
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.03 (Mainline Rehab Program)	Rehabilitate existing mainlines to prolong their life and increase efficiency.	Rehab 8000' of wastewater collection mainlines by October 31, 2004. (Franklin Yates)	WWCD Monthly Operating Report
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.04 (Lateral Lining Process)	Rehabilitate laterals utilizing the Cured in Place Process (CIPP).	Rehabilitate 65 laterals using the CIPP process. Complete by Oct. 31, 2004. (Tony Coker)	WWCD Monthly Operating Report; Work orders
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.05 (Infrastructure Repair Program)	Repair defects in the collection system possibly contributing to inflow & infiltration (I & I).	Perform 540 (45 ave. per month) various point and service repairs for 2004-CY. (Tony Coker)	WWCD Monthly Operating Report; Work orders

## Objectives and Targets - Continuation Sheet

This sheet may be used as an attachment to the EMS Objectives and Targets form when additional space is required.

**NOTE:** This form may be replicated on a computer or duplicated on a photocopier. The computer copy must look similar to this document and contain the same information.

- Record File/Retrieval ID (Optional):
- Record Schedule No./Retention Period:
- Page 2 of 3

Aspect Item	Specific Negative Impact (Enter a brief description.)	Objective & Target ID/No.	Objective	Target/Performance Indicator	Performance Record
Preventive Maintenance	Potential problems with equipment operation resulting in backups and SSOs	IP-2004.06 (Valve Exercising Program)	Ensure all critical valves are in good operation should an emergency occur.	Develop a valve-exercising program. Include drawings delineating valves to operate, SOI(s) & schedule(s). Establish program by May 1, 2004. (Harry McGee)	WWCD Monthly Operating Report; Associated drawings (GIS); Standard Operating Instruction(s); CityWorks scheduling via work orders
Exfiltration	Contamination of waterways	IP-2004.07 (Water Quality Assurance Program)	Identify leaks in collection system resulting in the potential contamination of waterways.	Identify locations where wastewater mains cross waterways and create a GIS map of those locations. Complete by May 1, 2004. Develop an inspection schedule and create work orders in the CMMS by October 31, 2004. (Gregory Daniels)	WWCD Monthly Operating Report; Standard Operating Instruction(s); Work Orders
Emergency Preparedness/ Response	Increased potential for damage to infrastructure, equipment and environment	IP-2004.09 (Flow Control Program)	Develop procedures for redirecting flows during emergency situations.	Develop a flow control program involving valves associated with force mains. Include drawings delineating valves to operate during specified emergencies. Finalize by July 1, 2004. (Harry McGee)	WWCD Monthly Operating Report; Associated drawings (GIS); Standard Operating Instruction(s)
Computerized Maintenance Management System (CMMS)	Potential for maintenance activities to be incomplete; loss of permanent records	IP-2004.10 (Asset Management and Evaluation Program)	Develop a system for evaluating the infrastructure for prioritizing rehabilitation initiatives.	Develop an asset management/evaluation program to include the production of reports identifying system rehabilitation priorities. Accomplish by July 1, 2004. (Chris Hendricks)	WWCD Monthly Operating Report; Standard Operating Instruction(s); Associated standard reports
Training	Lack of intellectual capital with regard to environmental and	IP-2004.11 (Skills-based Training)	Establish improved controls regarding training	Establish procedures & reports for managing the SBT Training database. Accomplish by July 1,	WWCD Monthly Operating Report; Standard Operating

## Objectives and Targets - Continuation Sheet

This sheet may be used as an attachment to the EMS Objectives and Targets form when additional space is required.

**NOTE:** This form may be replicated on a computer or duplicated on a photocopier. The computer copy must look similar to this document and contain the same information.

- Record File/Retrieval ID (Optional):
- Record Schedule No./Retention Period:
- Page 3 of 3

Aspect Item	Specific Negative Impact (Enter a brief description.)	Objective & Target ID/No.	Objective	Target/Performance Indicator	Performance Record
	operational effectiveness	Improvement Program)	management.	2004. (Susan Roberts)	Instruction(s); Standard training management reports
Operational Evaluations	Improper evaluations resulting in unqualified rehabilitation planning	IP-2004.12 (Pump Station Operational Evaluation Program)	Develop methodologies & criteria for establishing pump station rehabilitation priorities.	Develop formal, logical criteria for determining schedules for pump station rehabilitation. Complete by Aug. 1, 2004. (Harry McGee)	WWCD Monthly Operating Report; Grading Criteria Worksheet; Schedules (if needed)
Air Release Valve PM	Loss of operational & design effectiveness of force mains & pump stations; exfiltration	IP-2004.13 (Air Release Valve PM Program)	Ensure air release valves are working properly.	Establish an air release valve inspection and maintenance program. Complete by Aug. 1, 2004. (Ronald Inabinet)	WWCD Monthly Operating Report; Standard Operating Instruction(s); Inspection and PM schedule
Inflow & Infiltration (I & I) (Significant Aspect)	Loss of natural resources through energy use	IP-2004.14 (I & I Reduction Plan)	Establish a standard methodology for mitigating I & I	Develop a manual and/or SOI(s) for I & I reductions. Include a structured, comprehensive approach to I&I reduction within the document(s), and complete by Sept. 1, 2004. (Franklin Yates)	WWCD Monthly Operating Report; Standard Operating Instruction(s); I & I Manual (if necessary)
Computerized Maintenance Management System (CMMS)	Potential for maintenance activities to be incomplete; loss of permanent records	IP-2004.15 (CMMS Phase-in Project)	Encompass all aspects of operations within CMMS.	Phase-in all Technical Section operations into CityWorks CMMS program by Oct. 1, 2004. (Chris Hendricks)	WWCD Monthly Operating Report; CityWorks technical work orders

Note: Identification number IP-2004.08 was purposely not used to maintain numbering consistency with the Departmental Incentives.

**Wastewater Collection Department  
Environmental Management Systems  
Improvement Program**

**Page 1 of 1**

CPW EMS ID No: EMS - 4.3.3 Objectives & Targets  
ISO 14001, Sub Clause 4.3.3 Objectives & Targets

Revision Date: Feb. 6, 2004

Prepared By:  
Approved By:  
Signature:

Ronnie Inabinet  
A. Williams, Superintendent  
On File

**Program Name: System Cleaning Program**

**Pgm. No. (Obj. & Target ID): IP-2004.01  
Section: Maintenance**

**1. Background / Purpose:**

System cleaning is essential to the proper maintenance and operation of the wastewater collection system. Without scheduled maintenance of the collection system sediment, debris, grease, roots, solids and deposits build up and accumulate in the system. An emphasis is placed on areas that historically have experienced blockages within the system.

**2. Objective / Scope:**

**Objective:**

The objective of the WWCD System Cleaning Program is to reduce the number of Sewer System Overflows (SSO's) experienced by systematically cleaning designated mainlines.

**Scope:**

Cleaning is accomplished through the use of Boss and Harben cleaning units and Vac Trucks. This equipment utilizes pressures of up to 4000 PSI to scour the pipewalls within the collection system. Various specialized nozzles are utilized during this cleaning process. These nozzles are specifically designed to accomplish certain types of cleaning, providing the most effective means to achieve the desired results.

**3. Target / Timelines:**

Clean 556,200 feet (monthly ave. of 46,350) of wastewater collection mainlines on problem and high-risk areas through the 2004-CY.

*See associated Objective & Target Action Plan for action items, responsibilities and schedules.*

**4. Performance Indicator:**

WWCD Monthly Operating Report  
Work Orders

**5. Resource Allocation:**

For funds allocation, see the 2004 Wastewater Collection Department Operations & Maintenance Budget, Responsibility Number 013, Cost Center (Group Number) 3400 - Operation and Maintenance Budget.

**6. Related Documents:**

2004 EMS Summary of Objectives & Targets  
WWCD Monthly Operating Report  
Work orders

P(Hobson1):/Dept. Work/ Wastewater Shared./ISO/Objectives & Targets/2004 Objectives & Targets/2004-01 System Cleaning Prgm.doc

# **SAMPLE EMS DOCUMENTATION**

## ***TRAINING***



***Charleston CPW – Training, Awareness and Competence Procedure***  
***City of Gastonia WWTP – Training Procedure***

# CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE

*The on-line version and secured hardcopy are the controlled documents. The secured hardcopy will be identified by an "Official Document" stamp giving date of distribution. Any and all other documents are uncontrolled. Contact the EMS Program Manager for revision level status.*

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<b>Effective Date:</b>	<b>October 1, 2000</b>	<b>Page 1 of 3</b>
<b>Revision: 2</b>	<b>Identification Number: EMS – 4. 4. 2</b>	
<b>Title:</b>	<b>Training, Awareness and Competence Procedure</b>	
<b>Prepared By:</b>	<b>EMS Procedures Subcommittee</b>	
<b>Reviewed By:</b>	<b>EMS Management Steering Committee</b>	
<b>Approved By:</b>	<b>William E. Koopman Jr., General Manager</b> <b>John Cook PE, Assistant General Manager</b>	
<b>Date Approved;</b>	<b>August 25, 2000</b>	

---

## **0.0 Requirement: ISO 14001, Sub Clause 4.4.2 Training**

### **1.0 Purpose**

To identify, provide and track training that will help associates to minimize environmental impacts and increases operating efficiencies.

### **Scope**

ISO 14001, sub clause 4.4.2, requires CPW to identify training needs and provide specific training to those associates whose work activities could cause adverse environmental impact.

### **3.0 Responsibility & Authority**

- 3.1 Each department head shall identify environmental training needs.
- 3.2 The department head is responsible for maintaining environmental training requirements.
- 3.3 Environmental training needs will be evaluated annually by the department.

### **4.0 Procedure**

- 4.1 Identification of Training Needs

The knowledge and skills of associates necessary for the department to achieve environmental objectives will need to be identified. Knowledge and skill levels should be considered in recruitment and personnel selection. Ongoing development of associate skills will occur through internal and external training and education programs.

#### 4.2 Conduct of Environmental Training

Training appropriate to the achievement of environmental policies, objectives and targets will be provided to all personnel within the department.

Associates should have an appropriate knowledge base, which includes training in the methods and skills required to perform their tasks in an efficient and competent fashion and knowledge of the impact their activities can have on the environment if performed incorrectly.

#### 4.3 Legal and Other Requirements

Education and training will be performed in each department to ensure that associates have appropriate and current knowledge of regulatory requirements, environmental policy and the department's procedures and objectives. The level and detail of training will be determined according to the work assignment or task.

#### 4.4 Training Elements

Departmental environmental training programs should have the following elements:

- Identification of associate training needs to accomplish job assignment;
- Development of a training plan to address defined needs;
- Training of target associate groups;
- Documentation of training received;
- Evaluation of training received.

**NOTE:** Examples of types of Environmental Training:

Environmental Policy All associates would be required to receive this training to gain an understanding and commitment to the environmental policy, objectives, and targets of CPW.



Strategic Environmental Management Senior management may receive this training to gain commitment and alignment of CPW's environmental policy.

Skills Enhancement Associates with environmental responsibilities linked to significant aspects shall be required to receive identified training to improve performance in specific areas of the department (e.g. operations, laboratory, engineering, maintenance, etc).

Regulatory Compliance Associates whose actions can affect environmental compliance shall be required to receive training on the appropriate regulatory and internal work instruction requirements and be made aware on the consequences of regulatory non-compliance or deviation from approved work instructions.

#### 4.5 Adequate Resources

Adequate resources are to be made available to provide the identified training. In certain cases, training may require certified trainers, such as CDL, HAZWOPER or CPR. Environmental training will also be provided within six months of an associate's hire date. Annual refresher training will be conducted on CPW policy, and departmental objectives and targets.

#### 4.6 Tracking the Training Hours

To document compliance with regulatory and policy requirements, training hours will be collected and tracked. The department head will compare training received with the training plan to ensure policy goals are met. Training records should include:

- Associate name,
- Job title,
- Job description,
- Training requirements,
- Total training hours by category

### 5.0 Related Documents and Data

- 5.1 Environmental Training Records
- 5.2 Instructor Certification Records
- 5.3 CPW Training Record Form

<b>Standard Operating Procedure – EMS-0100.005</b> <b>Name: Training Procedure</b>	<b>Corresponding Requirements:</b> ISO Standard: 4.4.2 EMS Manual: 4.4.2 NBP Element: 8
Prepared By: Beth Eckert, Environmental / Administrative Manager	Revision Date: 3/3/03 Revision #: 6
Approved By: Beth Eckert, Environmental / Administrative Manager	Effective Date: 11/4/99
Signature:	Page 1 of 5

## 1.0 Purpose

- 1.1 The City of Gastonia Wastewater Treatment Division (WWTD) began implementing an ISO 14001 Environmental Management System (EMS) in January , 2000 and a National Biosolids Partnership EMS in July 2002. As a part of this process, the Division has identified and established documented procedures for the control and monitoring and measuring of the EMS, the significant aspects and impacts and critical control points determined by the Division, and the identified legal and other requirements, when necessary. Due to the nature of the WWT business, processes involved in the control and monitoring and measuring of most significant aspects and meeting legal and other requirements have been practiced for many years throughout the WWT facilities. Also, most staff employed by the Division have been adequately performing these tasks in the absence of documented procedures.
- 1.2 Management and most operations and laboratory staff have received certifications in water treatment, wastewater treatment, pretreatment, and/or laboratory work. Training at the WWT facilities has historically been done via on the job training by existing employees and supervisors. This process will not be deleted, rather, it will be supplemented by the existence of documented procedures for reference.
- 1.3 Once they have been formalized, documented training will be done for each employee on procedures relevant to their job duties. However, tasks required to be done in the course of treating or monitoring the wastewater will be performed as needed even in the absence of documented procedures and/or documented training.
- 1.4 This procedure is to establish a guide for the training of current and future personnel on the EMS and related documents and procedures.

## 2.0 Associated Equipment

- 2.1 None

## 3.0 Associated Documents

- 3.1 *Document Control Matrix for EMS System - EMS-0101.000A*
- 3.2 *Document Control Matrix for Crowders Operations - WCR-0101.000A*

- 3.3 *Document Control Matrix for Crowders Laboratory - WCR-0101.100A*
- 3.4 *Document Control Matrix for Long Creek Operations - WLC-0101.000A*
- 3.5 *Document Control Matrix for Long Creek Laboratory - WLC-0101.100A*
- 3.6 *Document Control Matrix for Pretreatment - WPR-0101.000A*
- 3.7 *Document Control Matrix for Biosolids - WRF-0101.000A*
- 3.8 *Aspect and Impact Ranking Form – EMS-0101.003E*
- 3.9 *Procedure Training Sign-In Sheet –EMS-0101.005A*
- 3.10 *Training Matrix – EMS-0102.005B*
- 3.11 *National Biosolids Partnership EMS Guidance Manual*
- 3.12 *National Biosolids Partnership Manual of Good Practice*

#### **4.0 Procedure**

- 4.1 All employees will be trained on the EMS policy and to a general EMS awareness level. All contractors will be notified of the environmental policy via mail and/or notification upon arrival at the site. Signs referencing the EMS policy have been posted at the entrance to the WWT facilities and the Resource Recovery Farm and policies are in the entrance areas or conference room of each Division location for review by visitors.
- 4.2 Personnel that can have a significant impact on the environment through their work practices will be trained on:
  - 4.2.1 The importance of conformance to the environmental policy, requirements of the environmental management system, and emergency preparedness and response requirements. Roles and responsibilities related to these will be communicated.
  - 4.2.2 The potential or actual significant environmental impacts of their work activities.
  - 4.2.3 The relevant procedures identified in the training matrix, the benefits of adhering to the procedures and potential environmental consequences of departure from them.
- 4.3 Training requirements of contractor personnel will be established on a case by case basis. City Staff who serves as the Contractors Contact person shall establish and track these requirements.
- 4.4 Training roles of Division personnel are as follows:
  - 4.4.1 EMS Coordinator and management will identify training needs (Training Matrix EMS-0101.005B) regarding the EMS procedures and the EMS Coordinator, or designee,

will train area Supervisors and management on relevant procedures. The EMS Coordinator shall assist supervisors upon request with the training of other personnel.

4.4.2 Supervisors are responsible for identifying training needs of their respective personnel on area Standard Operating Instructions (SOIs). Supervisors are also responsible for ensuring that the identified training needs of their personnel on EMS procedures and area SOIs are met.

4.4.3 Persons either preparing a procedure or approving a procedure are not required to receive documented training on the procedure. Either of these persons must train Division staff that has been identified as needing the training. This may involve the training of Supervisors or other Division personnel so that they may appropriately train identified Division staff.

4.5 Standard Operating Instructions must be developed for each activity which has an impact on a significant environmental aspect or that is needed to properly control a critical control point (as identified on the Aspect and Impact and Critical Control Point Ranking Form # EMS-0101.003E). The area supervisors are responsible for using their knowledge of the operation of their area to determine which procedures affect the significant environmental aspects.

4.5.1 Additionally, supervisors are to refer to the list of critical control points and the NBP Manual of Good Practice for additional information pertaining to procedure requirements to address activities at control critical control points.

4.6 All employees must receive training on documented procedures and revisions which are not exempted via the Corrective/Preventative Action procedure (EMS-0100.004). The area supervisors are responsible for determining which procedures are required for each employee.

4.7 Training needs will be indicated on the training matrix form (EMS-0102.005B) by gray shading. The EMS coordinator or other personnel authorized to make changes on the read-only drive must be notified of any changes in the employee training requirements.

4.8 The EMS Coordinator or designated personnel will train all new employees on policy and EMS awareness on their first day of work, whenever possible, and all current EMS procedures appropriate for the position within 30 days of reporting to work.

- 4.8.1 Supervisors must make arrangements with the EMS Coordinator to ensure training is completed as required when a new employee reports to work with the Division.
- 4.9 Training will not be required on revised procedures where the intent of the procedure is not revised, merely logistics i.e. spelling, grammar, numbering, etc... This occurrence will be tracked by a C/PAR.
- 4.10 When deemed appropriate by the Supervisor, retraining may be done only on the modified portion of a revised procedure. When training is done this way the revised section must be noted on the training form.
- 4.11 Retraining will be done as a result of an incident where a procedure was not properly followed.
- 4.12 All trained personnel must sign the sign-in sheet (*EMS-0101.005A*) to document their training and understanding of the procedure.
- 4.13 The effectiveness of the training will be evaluated by an oral or written test, and/or by observation of the employee performing the task according to procedure. The supervisor or person designated to perform the training will use this information to evaluate whether the training is sufficient or if more training is required. When the training is judged to be sufficient, the supervisor/trainer will date and initial the "Training Sufficient" section of the training sign-in-sheet (*EMS-0101.005A*) and the employee will be permitted to perform the task unsupervised.
- 4.13.1 In the event that training is done over a period of time and not on one day, the training may be documented by the entry of a range of dates on the training form and matrix.
- 4.13.2 Many employees may only be required to perform various portions of a procedure. Training may only be performed on the portion of the procedure that is appropriate and the sections of the procedure trained on must be indicated on the training form (*EMS-101.005A*).
- 4.14 The sign-in sheet must be submitted to the EMS Coordinator, or designee, for recording on the Training Matrix (*EMS-0101.005B*).
- 4.15 All internal EMS auditors must have either received training from an outside EMS auditing training course or have observed at least one internal audit, audited under the guidance of a previously qualified auditor, and have been trained on the City's EMS Auditing procedure. Prior to auditing without guidance, new auditors must have been deemed sufficiently trained

and able to perform audits by the EMS Coordinator. Internal training and determination must be documented on a procedure training sign-in form (EMS-0101.005A).

4.15.1 Documentation verifying external auditor training will be maintained in EMS files.

4.16 Compliance auditors are chosen by the Division Manager based on knowledge and experience. The Division staff who are currently serving as compliance auditors have prepared the auditing procedures based on their knowledge and experience. Future internal compliance auditors must receive documented training on the auditing procedure and observe at least one audit prior to becoming a compliance auditor.

## 5.0 Revision History:

Revision		C/PAR #	Reason for Revision	Description of Revision
Date	#			
3/3/03	6	EMS-0084	C/PAR	Added a modification history section
	6	EMS-0116	C/PAR	Added NBP requirements as a part of the WWTD's participation in the NBP demonstration group.

**SAMPLE EMS DOCUMENTATION**

***INTERNAL AND EXTERNAL COMMUNICATION***



***Charleston CPW – Internal Communication Procedure***  
***Charleston CPW – External Communication Procedure***  
***City of San Diego WWC – Communication and Environmental Information***

# **CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE**

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<b>Effective Date:</b>	<b>October 1, 2000</b>	<b>Page 1 of 3</b>
<b>Revision: 2</b>	<b>Identification Number: EMS – 4. 4. 3 (A)</b>	
<b>Title:</b>	<b>Internal Communication Procedure</b>	
<b>Prepared By:</b>	<b>EMS Procedures Subcommittee</b>	
<b>Reviewed By:</b>	<b>EMS Management Steering Committee</b>	
<b>Approved By:</b>	<b>William E. Koopman Jr., General Manager John Cook PE, Assistant General Manager</b>	
<b>Date Approved:</b>	<b>August 25, 2000</b>	

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## **0.0 Requirement: ISO 14001, Sub Clause 4.4.3 Communication**

### **1.0 Purpose**

To build understanding, cooperation, and involvement from all associates in the performance of their duties in an environmentally conscious manner.

### **2.0 Scope**

ISO 14001, sub clause 4.4.3, with regard to environmental objectives and targets, requires establishing processes to report internally and, where desired externally, on the environmental activities of the organization.

### **3.0 Responsibility & Authority**

- 3.1 Communication of environmental issues is the responsibility of all CPW departments.
- 3.2 It is the responsibility of every associate to communicate environmental concerns, problems, or suggestions to their supervisor.



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**Effective Date:**  
**Revision: 2**  
**Title:**

**October 1, 2000**  
**Identification Number: EMS – 4. 4. 3 (A)**  
**Internal Communication Procedure**

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## **4.0 Procedure**

### **4.1 Communication through Normal Management Channels**

#### **4.1.1 Management Channels**

The traditional flow of information from one management level to the next is appropriate and will be used to communicate environmental information. Periodic, or routine staff meetings with open dialogue is encouraged.

#### **4.1.2 Communication through Internal Newsletters**

Certain environmental communications will be made through internal newsletters. Programs that promote environmental excellence should be communicated to CPW associates and considered for release to the public.

#### **4.1.3 Communication through Videos**

Videos may be used to relay environmental information to large groups of associates.

#### **4.1.4 Communication through e-mail and Special Memos**

Announcements concerning environmental improvement programs, upcoming internal audits, DHEC inspections, etc. will be disseminated through e-mail for large groups of associates or by special memo to specific individuals or groups.

#### **4.1.5 Communication through Suggestion Boxes**

Suggestion boxes will be made readily available to all associates. Communication in this form coming directly from individual associates is a valuable source of information about potential environmental impacts. Suggestions will be evaluated concerning environmental improvements. Rewards will be considered for suggestions that are implemented.

#### **4.1.6 Special Communication via Attorney**

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**Effective Date:**

**October 1, 2000**

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**Revision: 2**  
**Title:**

**Identification Number: EMS – 4. 4. 3 (A)**  
**Internal Communication Procedure**

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Certain environmental information should be relayed only to those with a need to know by an attorney. When communication is done in this way the information is protected by the Attorney-Client privilege doctrine.

**4.1.7 Recognition Communication**

Both positive and negative recognition must be given to associates. Positive recognition shall be given in accordance with CPW recognition programs. Negative recognition must be given if employees knowingly violate regulations or CPW policies that adversely impact the environment. Disciplinary action will be administered in accordance with CPW policy.

**4.2 Related Documents and Data**

- 4.2.1 Records containing internal communication sent to associates.
- 4.2.2 Records containing associate feedback.

# CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE

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Effective Date:	October 1, 2000	Page 1 of 3
Revision: 2	Identification Number: EMS – 4. 4. 3 (B)	
Title:	External Communication Procedure	
Prepared By:	EMS Procedures Subcommittee	
Reviewed By:	EMS Management Steering Committee	
Approved By:	William E. Koopman Jr., General Manager John Cook PE, Assistant general Manager	
Date Approved:	August 25, 2000	

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## 0.0 Requirement: ISO 14001, Sub Clause 4.4.3 Communication

### 1.0 Purpose

The purpose of this procedure is to define the steps that CPW follows to:

- (1) Control the receipt, documentation and response to external communications regarding CPW's environmental aspects
- (2) Consider external communication procedure on significant environmental aspects
- (3) Document related decisions

### 2.0 Scope

ISO 14001, sub clause 4.4.3, with regard to external communication requires establishing processes on receiving, documenting and responding to communications from external interested parties.

### 3.0 Responsibility & Authority

- 3.1 The department head (or designee) investigates the need for external communication.
- 3.2 The Customer Relations Specialist prepares releases of public interest.
- 3.3 The General Manager (or designee) authorizes prepared releases to the public.

## **4.0 Procedure**

### **4.1 External Communication Channels**

4.1.1 With regard to CPW's environmental aspects or environmental management system (EMS) the department head (or designee) investigates the need for external communication on a case by case basis. The investigation can be initiated by, but is not limited to, the following:

- Complaints and/or inquires from customers, SCDHEC, community groups, or other interested parties
- External promotional activities regarding CPW environmental policy or programs
- New or changing environmental regulations

**NOTE 1:** Such communications include, but are not limited to:

- Statements regarding CPW's policy commitment to the environment
- Statements regarding CPW's significant environmental aspects and their potential impacts
- External interested party concerns and questions, and responses to these concerns and questions
- Reports on performance with regard to environmental quality, objectives and targets, and on compliance with environmental regulations as determined by audits and management reviews
- Communications initiated by or to be received by potential legal entities

4.1.2 The department head or (designee) identifies the extent and/or impact of the problem or inquiry and determines what information needs to be communicated.

4.1.3 The department head or (designee) obtains the needed information from the appropriate associates within CPW or the department and, as necessary assistance from the Customer Relations Specialist,

who constructs the content, format, and method of the communication accordingly. Designated individuals are then authorized to release information to external parties.

- 4.1.4 Statements regarding CPW environmental policy, significant environmental aspects and their potential impacts, reports on environmental performance or compliance with regulatory requirements and communications to legal entities, shall be reviewed and approved by the CPW General Manager (or designee) prior to release.

NOTE 2: Information in the communication should be understandable, adequately explained, verifiable, and presented in a consistent form. Methods to be considered include, but are not limited to:

- External newspapers or newsletters
- Public announcements and/or news conferences (TV, radio, etc.)
- Paid advertisements or public notices in newspapers, industry journals, or other publications
- Annual reports
- Regulatory submissions and public records
- Commission meetings
- Letters, memos and other correspondence
- Electronic mail messages; faxes, etc.
- Bill inserts
- Internet Web Site

- 4.1.5 Executive management (or designee) issues the communication to the required recipients and interested parties.

- 4.1.6 A copy of communication received or sent, as well as any requests that initiated the communication and/or requests for the information shall be retained for a period of **5** years.

## **4.2 Related Documents and Data**

- 4.2.1 Records regarding EMS external communications.

### **DD-SEOP-4.4.3**

## **COMMUNICATION OF ENVIRONMENTAL INFORMATION**

### **(INTERNAL AND EXTERNAL)**

#### **1.0 PURPOSE AND SCOPE**

This procedure describes the methods to be used for documenting and responding to inquiries related to the environmental policies, practices, and performance of the City of San Diego's Metropolitan Wastewater Department (MWWD) Wastewater Collections (WWC) Division. This procedure applies to inquiries made by interested parties external to the WWC Division, as well as WWC Division employees, contractors, or suppliers. The procedure does not apply to the resolution of questions that may be raised during routine environmental training activities, internal, and external audits.

#### **2.0 DEFINITIONS**

##### **2.1 Interested Party**

For the purposes of this procedure, an interested party is defined as an individual, organization, or group interested in, concerned with, or affected by the environmental performance of the WWC Division. Examples of interested parties include regulatory agencies or authorities, community groups, environmental organizations, the press, private citizens, employees, and employee organizations; the definition may also be extended to contractors or suppliers working at or delivering materials or services to individual WWC Division sections.

##### **2.2 Computerized Maintenance Management System**

Any Computerized system that functions as a tool for dispatching and documenting WWC Division field personnel to sewer related emergencies.

#### **3.0 RESPONSIBILITIES**

##### **3.1 Environmental Management Representative**

The Environmental Management Representative (EMR) has primary responsibility for coordinating, receiving, logging, and evaluating all inquiries about WWC Division's environmental policies, practices, and performance with appropriate WWC Section Managers, staff and the MWWD Public Information Section. The EMR is responsible for responding directly to inquiries related to the ISO 14001 Environmental Management System (EMS). made by WWC Division personnel, but shall review all external EMS inquiries with the responsible Section Manager, Deputy Director and/or Public Information Section prior to making a response.

##### **3.2 WWC Division Personnel**

Any WWC Division employee who is contacted by an interested party requesting information regarding the Division's environmental policies, practices, or performance shall refer all such

inquiries to the appropriate supervisor or Section Manager, who in turn will answer or direct the inquiry to the EMR (or Deputy Director as needed) for evaluation and appropriate action.

### 3.3 Deputy Director, WWC Division

The WWC Deputy Director is responsible for evaluating external information requests with the EMR, for providing direction as to whether a written or verbal response is required, and for reviewing and approving all written responses.

### 3.4 Section Manager

The Section Manager is responsible for responding to, and logging any inquiries concerning section specific performance and/or programs. The Section Manager may direct inquiry to appropriate Section staff and /or EMR.

## 4.0 PROCEDURE

### General

Internal communication may be conducted through any of the following manners:

- normal management channels i.e. meetings where information flows from one management level to the next)
- electronic message and e-mail
- memos, posters and circulars on notice boards
- internal newsletter
- training programs

External communication issues will be conducted through the following means:

Sewer Pump Stations Section, Construction/TV Section, Main Cleaning Maintenance Section, Engineering Section, Maintenance Coordination/Scheduling Section, Administration Section:

- Sewer Response Inquiry: All inquiries of this nature need to be referred to the Sewer Emergency Hotline at (619) 515-3525 and documented in the current CMMS per the WWC Division Sewer Overflow Response and Tracking Plan.

Food Establishment Waste Discharge Section:

- Sewer Infrastructure Inquiry: All FEWD inquiries of this nature will be documented and tracked in the FEWD CMMS.

All Sections:

- Environmental Policy Inquiry: Document the inquiry in the current CMMS and refer the inquiry to EMR

The procedure consists of the following steps:

- 4.1 The EMR shall document the receipt of written or verbal inquiries related to WWC Division's environmental policies and performance on an Environmental Communications Log form (DD-F-001.0, see the example provided as Figure 1). The EMR shall then evaluate the source and content of the inquiry.
- 4.2 If the inquiry was received verbally from an interested party within WWC Division, the EMR shall respond verbally, briefly note the content of the response on DD-F-001.0, and enter the date the response was made.
- 4.3 If the inquiry is in the form of a written complaint or request for specific information from an interested party from outside the Division, the EMR shall confer with the WWC Deputy Director or appropriate Section Manager(s) and determine an appropriate response. If a verbal response is determined to be appropriate, the EMR shall make the contact and record the action in the log as noted in Step 2.
- 4.4 If a letter or other documented response is required, the EMR shall prepare a draft for the Deputy Director's review, and shall resolve any comments prior to transmittal. Requests for copies of WWC Division's environmental policy (Section 2 of the WWC Division's Environmental Management Plan) shall be honored in all cases. The EMR shall record the type of response on the log, and enter the date of the response.
- 4.5 Completed Environmental Communications Log pages and associated incoming and outgoing correspondence shall be retained as environmental records in compliance with Section 5.3 of the WWC Division Environmental Management Plan.
- 4.6 Section Managers will respond to inquiries concerning the performance of their direct staff. The Section Manager may direct inquiries to the EMR.
- 4.7 The procedures for handling of media communication shall be as follows:
  - 4.7.1 All questions and calls from the press have to be channeled to the MWWD Public Information Officer (PIO).
  - 4.7.2 The PIO shall make reference to Corporate Communication Department prior to any news release to media.
  - 4.7.3 The EMR shall log the details of the media communication when issued by the PIO in Master Log (Figures 2).

## **5.0 REFERENCES**

WWC Division Environmental Management Plan  
Section 2, Environmental Policy  
Section 4.3, Communications  
Section 5.3, Records

WWC Division Sanitary Sewer Overflow Response and tracking Plan (SORTP)



**Figure 1**

**Form DD-F-001.0  
External Communications Record**

<i>Date Communication Received</i>	
<i>Type of Communication (circle one)</i>	Internal      External
<i>Received From</i>	
<i>Address/Telephone Number/ E-Mail</i>	
<i>Content of Communication (attach copy if possible)</i>	
<i>Will Organization Respond?</i>	YES      NO
<i>Date of Response</i>	
<i>Person Responding</i>	
<i>Position</i>	
<i>Nature of Response (attach copy if possible)</i>	
<i>Are Internal Actions Necessary? (If Yes, fill out a Corrective &amp; Preventive Action Form, DD-F-006.0.</i>	

| Contact Person: \_\_\_\_\_

Date Completed: \_\_\_\_\_

Log No.: \_\_\_\_\_

## External Communications Tracking Log Master List

[illegible]

# **SAMPLE EMS DOCUMENTATION**

## ***DOCUMENT CONTROL AND RECORD MANAGEMENT***



***Charleston CPW – Document Control Procedure***  
***Charleston CPW – Record Management Procedure***  
***City of Eugene WWTP – Records Procedure***  
***Kent County DPW – Controlling Documents Procedure***

# **CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE**

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<b>Effective Date:</b>	<b>October 1, 2000</b>	<b>Page 1 of 2</b>
<b>Revision: 3</b>	<b>Identification Number: EMS – 4.4.5</b>	
<b>Title:</b>	<b>Environmental Management System Document Control Procedure</b>	
<b>Prepared By:</b>	<b>EMS Procedures Subcommittee</b>	
<b>Reviewed By:</b>	<b>EMS Management Steering Committee</b>	
<b>Approved By:</b>	<b>William E. Koopman Jr., General Manager John Cook PE, Assistant General Manager</b>	
<b>Date Approved;</b>	<b>August 25, 2000</b>	

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**0.0 Requirement**      **ISO 14001; Sub Clause 4.4.5**  
**South Carolina Department of Archives and History. Division**  
**of Archives and Records Management**

## **1.0 Purpose**

This document describes the procedure to be followed for the approval, issue, and maintenance of all environmental management system (EMS) controlled documentation.

## **2.0 Scope**

This procedure shall apply to all CPW EMS controlled documentation.

## **3.0 Responsibility & Authority**

All EMS controlled documentation shall be subject to approval by the following before issue and release:

- a)      General Manager and Assistant General Manager for EMS Procedures affecting all CPW departments
- b)      Section Head and/or Department Head for site specific EMS documentation
- c)      EMS Program Manager for ISO 14000 EMS documentation

## **4.0 Procedure**

- 4.1      EMS procedures, processes, work instructions, associated records shall be defined, appropriately documented and updated as necessary. Each department

will clearly define the various types of documents and records which establish the EMS.

4.2 A record (master list) of EMS controlled documentation affecting all CPW organizations shall be maintained within Information Services. EMS documentation (i.e., procedures or work instructions, records) which are specific to a department, shall be maintained and controlled within the department and include:

- 1) Reference number
- 2) Issue number
- 3) Disposition of copies

4.3 Distributed copies of EMS controlled documents shall be stamped “Official Document” with the date of distribution.

4.4 All EMS official documents will be of a standard format and contain the following:

- Effective date of distribution
- Number of document pages
- Revision number
- Title of document
- Preparer (originator) of document
- Approval authority (original on file if published electronically)
- Identification number

4.5 Distribution of EMS “official documents” may be published electronically with read only status. The original paper document with approval signature shall be retained on file.

4.6 All copies of EMS documentation that become obsolete by reissue shall be promptly removed, marked obsolete and handled in accordance with the “EMS Records Procedure.”

## **5.0 Related Documents and Data**

5.1 South Carolina Local Government Records Manual

5.2 EMS Records Procedure

## CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE

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<b>Effective Date:</b>	<b>October 1, 2000</b>	<b>Page 1 of 4</b>
<b>Revision: 3</b>	<b>Identification Number: EMS – 4.5.3</b>	
<b>Title:</b>	<b>EMS Records Procedure</b>	
<b>Prepared By:</b>	<b>EMS Procedures Subcommittee</b>	
<b>Reviewed By:</b>	<b>EMS Management Steering Committee</b>	
<b>Approved By:</b>	<b>William E. Koopman Jr., General Manager</b> <b>John Cook PE, Assistant General Manager</b>	
<b>Date Approved:</b>	<b>August 25, 2000</b>	

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**0.0 Requirement: ISO 14001, Sub Clause 4.5.3; Records Management, Section 30-1-80, Code of Laws of South Carolina, 1976 as amended.**

### **1.0 Purpose:**

The purpose of this procedure is to define the steps that CPW follows to ensure that environmental management system (EMS) records are properly identified, collected, indexed and filed to allow for ready access and retrieval.

**NOTE:** All records created or received by the Commissioners of Public Works during the course of business are considered public records and as such are governed by Section 30-1-80, Code of Laws of South Carolina, 1976, as amended. It will be the duty of the Commission to establish and maintain an active and continuing records program in compliance with all statutory guidelines, and to provide for the economical and efficient management of all Commission records from their creation or receipt, through their ultimate disposition.

### **2.0 Scope:**

- 2.1 This procedure applies to EMS CPW records that associates use, handle or maintain.
- 2.2 The EMS Records Procedure will provide for:
  - 1.) Record Generation
  - 2.) Record Review
  - 3.) Active Records Storage
  - 4.) Inactive Record Retirement
- 2.3 Definition of Terms

**Active Records** - Records that must be maintained in office space because they are referred to once a month or more and are needed to conduct daily business.

**Disposition** - The final action that puts into effect the results of an appraisal decision for a series of records. Transfer to an archival repository, transfer to a records center, or destruction are some possible disposition actions.

**Document** – Recorded information, regardless of form or medium. Also called record or documentary material.

**Environmental Management System (EMS) Record** Records that are defined as EMS records by the department and listed on the Master Control Document Register as records necessary to maintain conformance with the EMS and ISO 14001 requirements.

**Inactive Records** - Records referred to less than once a month and are suitable for storage outside of the immediate office.

**Record** – Recorded information, regardless of physical form or characteristics of the medium (e.g. paper, photograph, sound records, or computer generated, machine readable record) made or received by an organization to fulfil its legal obligations or to transact business.

**Records Retention/Disposition Schedule** – Document that specifies actions for the retention and disposition of current, inactive, and non-current records series of an organization or agency.

**Record Series** – Documents arranged according to a filing system or maintained as a unit because they relate to a particular subject or function, result from the same activity, have a particular form, or share some other relationship arising out of their creation, receipt, or use.

**Scheduling** – The action of establishing retention periods for records and providing for their proper disposition at the end of active use. See Records Retention/Disposition Schedule.

### 3.0 Responsibility and Authority

- 3.1 The department document control representative ensures that EMS records are properly identified, collected indexed, filed, and stored to allow for ready access and retrieval, at the department level, and that these records are properly disposed in accordance with the CPW Records Management Policy RM-PM-01.
- 3.2 The Records Retention Specialist/Information Services will provide for:
  - 1.) Inventory, appraisal, and scheduling of records according to the policies and procedures as set forth by the South Carolina Department of Archives and History and the EMS;
  - 2.) Preservation and restoration of records deemed to be of vital, continuing, or enduring value;
  - 3.) Destruction of records which have outlived their administrative, legal, or fiscal value;
  - 4.) Transfer and maintenance of inactive and semi-active office records to approved storage facilities;

- 5.) Reporting of all required program information to the South Carolina Department of Archives and History;
- 6.) Disaster preparedness and recovery efforts for CPW records.

#### **4.0 Procedure**

##### **4.1 EMS Record Generation**

When an EMS record is needed or generated, the appropriate associate (specified in the procedure or work instruction) completes the record.

##### **4.2 EMS Record Review**

The associate conducts a review of the EMS record and forwards the record to the document control representative for review and filing.

**NOTE:** The EMS record's review ensures that:

- 1.) The record is complete and legible;
- 2.) Signatures and initials are filled in where necessary;
- 3.) The information contained in the record is correct and has not been improperly altered;
- 4.) Any errors that have been made in the record have been properly corrected, (a single line drawn through the error) the correction initialed and dated;
- 5.) The record has an approved Record Retention Schedule authorizing its final disposition.

**NOTE:** It will be the responsibility of the department document control representative to notify the Records Retention Specialist/Information Services of all new EMS record series. A Record Series Inventory Form will be completed by the document control representative for each record series and forwarded along with pertinent information to the Record Retention Specialist

##### **4.3 Active Record Storage**

The department document control representative reviews the EMS record for completeness and accuracy and either sends the record back for correction or files the record according to procedure.

**NOTE:** Containers for storing active records within the department may be folders, file cabinets, boxes, computer directories, etc., provided they allow the record to be properly identified and stored so as to minimize deterioration, damage, or loss.

##### **4.4 Record Retrieval**

When a record is removed from filing the person will check out the record in accordance with department procedures.

##### **4.5 EMS Records Purge**



Annually or when quantity warrants, the document control representative (or designee) purges all EMS records that are past their retention period and disposes of them according to the CPW Records Management Policy RM-PM-01.

4.6 Inactive EMS Records Retirement

EMS Records that are infrequently needed but must be kept for a specific amount of time for legal, fiscal or administrative reference value should be transferred to inactive records storage in accordance with the CPW Records Management Policy RM-PM-01.

4.7 Inactive EMS Records Retrieval

Requests for EMS record retrieval can be made via telephone, electronically, or in writing. All requests for EMS records placed in storage are to be made through the Records Retention Specialist and/or the document control representative for the respective department in accordance with the CPW Records Management Policy RM-PM-01.

4.8 Final Records Disposition

EMS records must be disposed of in accordance with the CPW Records Management Policy RM-PM-01

## 5.0 Related Documents and Data

- 5.1 Document Control Procedure (EMS-4.4.5)
- 5.2 SC Department of Archives and History Record Series Inventory Form - RS-I-1(90) (EMS-4.5.3 -2)
- 5.3 SC Department of Archives and History Records Retention Schedule Document - RS-S2(91)(EMS-4.5.3 -3)
- 5.4 CPW Records Transfer List Document – RTL3.97 (EMS-4.5.3 -4)
- 5.5 CPW Records Disposal Authorization Document RDR3.97 (EMS-4.5.3 -5)
- 5.6 SC Department of Archives and History Microfilm Quality Certification for Records Disposition – TEMP-61(3/93) (EMS-4.5.3 -6)
- 5.7 SC Department of Archives and History Authorization for Disposal of Original Paper Records Stored in Optical Disk Systems (TEMP-80 2/95) (EMS-4.5.3 -7)
- 5.8 SC Department of Archives and History Microfilm Transmittal and Receipt – ARM – 8A(94) (EMS-4.5.3-8)
- 5.9 Inactive Record Charge-Out (EMS-4.5.3-9)
- 5.10 CPW Records Management Policy RM-PM-01

## CITY OF EUGENE - WASTEWATER DIVISION

### Procedure

<b>Subject:</b>	Records			<b>Document No.</b>	WW-00017
<b>Last Reviewed By:</b>	Linda Delaplain	<b>Original Date:</b>	4/28/00	<b>Revision No.:</b>	2
<b>Approved By:</b>	Management Team			<b>Date Approved:</b>	9/10/03

### Purpose

This procedure describes the process to be used for maintaining all records stored by the Division. These records include internal records such as audit records; old versions of revised policies, procedures, and work instructions; records stored in databases (including training, maintenance system, laboratory system, chemical inventory system, distributed control system, etc.; instrument maintenance records; all completed data forms; and other documentation that provides documentation of the Divisions activities. External records include contracts, permits, and other documents that are provided by outside sources.

### Scope

This procedure applies to all records that may be stored for the Division in the document imaging system, manual files, databases, or archive files.

- [New Records](#)
- [Record Retention and Disposal](#)

### Definitions

- Archive Files – all records stored in Centrifuge Building are referred to as archive files
- [Document Control](#)
- [Document Imaging System](#)
- [Manual Files](#)
- [Record Owner](#)
- [Records](#)

### Safety Requirements

All specific safety requirements will be included or referred to in specific work instructions.

### Procedure (Include reporting requirements and precautionary steps in this section)

#### Accountability:

#### Responsibility:

#### **New Records**

Division Staff

Create and/or receive documentation to be maintained as a record for the Division.

Route record to Document Control Staff.

**NOTE:** If record is to be stored in archives, provide list of documents to be stored to Document Control Staff.

Document Control Staff	<p>Receive document(s) to be stored as a record(s).</p> <p>Determine filing location of record.</p> <ul style="list-style-type: none"> <li>▪ If record is to be maintained as an image, scan the document into Laserfiche.</li> <li>▪ If record is to be filed in the manual files, file.</li> <li>▪ If record is to be archived, enter into archive database, print label for archive box and attach to box, route to archive storage.</li> <li>▪ If the record is a training record, enter into training database. Route all Training Verification Forms to Laserfiche for scanning.</li> </ul>
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### **Record Retention and Disposal**

Document Control Staff	On an annual basis, review all records and their retention times. Identify records that are eligible for disposal using the Record Retention Schedule. Route Record Disposal Report to record owner for authorization to dispose of the record.
Division Staff	Review list of records eligible for disposal. Approve records for disposal or note new date for disposal. Route Record Disposal Report back to Document Control Staff.
Document Control Staff	Make changes noted on the Record Disposal Report related to disposal dates. Routes revised Record Disposal Report to Division Management Team for approval.
Division Management Team	Reviews Record Disposal Report, approves or denies records for disposal, and routes back to Document Control Staff.

### **References**

- ISO 14001 Standard, 4.5.3 Records
- [EMS Manual, Records Policy](#)
- [Record Retention Schedule](#)

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- 7.0 DOCUMENTS**
- 8.0 RECORDS**
- 9.0 ATTACHMENTS**
- 10.0 REVISION HISTORY**

### **1.0 PURPOSE**

- 1.1 The purpose of this procedure is to establish the general requirements for the work process of controlling documents at the Kent County Dept. of Public Works Regional Wastewater Treatment Facility.
- 1.2 The purpose of this work process is to establish the Kent County Dept. of Public Works Document and Data Control specification.

### **2.0 SCOPE**

- 2.1 This procedure addresses all documents and data relating to the requirements of ISO 14000, including documents of external origin as applicable, including:
  - (a) Environmental Program Manual
  - (b) Procedures
  - (c) Process Instructions
  - (d) Design Output and Change Documentation
  - (e) Special Process Control Documentation
  - (f) Associated Reference Documentation and Lists
- 2.2 Environmental Management System Records are handled in accordance with the Kent County Dept. of Public Works Environmental Management System Procedure 2-11-P01.

### **3.0 DEFINITIONS**

- 3.1 *Approved Document or Data* - Any informational or instructional paper, drawing, microfiche, microfilm, electronic data, magnetic tape or disc which has been formally approved for issue. This includes, but is not limited to, the following: guides, manuals, procedures, process instructions, regulations, rules, specifications and standards.

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3.2 *Controlled Copy* - Any copy of an approved document issued to a particular branch, department or individual, which has been uniquely identified as a "Controlled Copy" and is traceable for recall. The use of a controlled copy ensures that work affecting process safety is performed to the applicable revision of the document, and that the current revision status is established.

3.3 *Environmental Program Document Control* - Control of documents related to the environmental program used to manage and oversee the environmental program.

3.4 *EMS Librarian* – The person responsible for maintaining all controlled documents and updating the documents as they are revised.

3.5 *Traceability* - For documentation, the ability to preserve the revision identity of a copy from its point of issuance to its assigned recipient so that it can be identified or recalled as required.

#### **4.0    REFERENCES**

None

#### **5.0    REQUIREMENTS**

##### **5.1    *Classes of Documentation***

There are three classes of documentation represented by policy, procedures and process instructions:

- 5.1.1 Documents produced internally, for example the Environmental Management System documents and the program element procedures and process instructions;
- 5.1.2 Documents produced outside Kent County Dept. of Public Works, but approved for use as references, for example standards and codes of government or industry organizations pertaining to the work process undertaken by Kent County Dept. of Public Works permanent or contract personnel; and
- 5.1.3 Incoming documentation, that is to be verified on receipt such as vendor-supplied documents.

##### **5.2    *Issuing and Maintaining Controlled Documents***

- 5.2.1 Controlled Documents – In order to ensure that only the latest edition of any one Environmental Management System document is being used it is necessary to ensure that the release of the appropriate document is controlled.

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5.2.2 Control of all EMS documents shall be the responsibility of the EMS Librarian. As each revision is prepared, the approved document shall be submitted to the EMS Librarian for inclusion in the control system.

5.2.3 All documents shall be maintained in Adobe Acrobat 5.0 “pdf” form on the central network V drive. The EMS Librarian shall ensure that the document is converted to “pdf” format. It shall be secured so that it cannot be modified without a specific password.

5.2.4 All controlled documents shall be available to staff via the Adobe Acrobat Reader.

5.2.5 Once a document is printed, it shall be considered uncontrolled, unless stamped “Controlled” by the EMS Librarian. Such documents shall expire within 90 days of issuance, and must be reissued for additional 90-day periods.

5.2.6 In addition, a statement shall be added to the document that reads “This document is an UNCONTROLLED DOCUMENT, valid only on \_\_\_\_\_ (the day it is printed), unless stamped CONTROLLED COPY in red ink.”

### 5.3 *Control*

5.3.1 The Environmental Management System Manual, Procedures, and Work Instructions shall be controlled in accordance with this procedure. Numbering of these documents is described in the Kent County Dept. of Public Works Environmental Management System Procedure 2-10-P01.

5.3.2 A controlled Copy Issuance list shall be maintained under the authority of the Environmental Program Manager and in accordance with the Environmental Management System Procedure 2-12-P02, Establishing and Maintaining Libraries.

5.3.3 Documents prepared under this program shall also be maintained using the Greenware software package.

### 5.4 *Approval*

Document approval authority is given by category as follows:

5.3.1 The Environmental Management System Manual, Procedures, and Work Instructions approval shall be as indicated in the Kent County Dept. of Public Works Environmental Management System Procedure 2-10-P01, Developing Policies, Procedures and Work Instructions.

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5.3.2 Environmental Management System design output, change documentation and process control documentation, including Approved Lists, shall be approved by the appropriate Manager, as described in the Kent County Dept. of Public Works Environmental Management System Procedure 2-01-P01.

5.3.3 Reference documentation is considered approved by virtue of reference in the base document.

#### 5.4 *Approved Lists*

Approved lists shall be maintained by category as follows:

The Environmental Management System Manual, Procedures, and Process Instructions, shall be listed on an "Environmental Management System Documents List", maintained under the authority of the Environmental Program Manager (Reference Kent County Dept. of Public Works Environmental Management System Procedure 2-10-P01).

#### 5.5 *Reference Documentation*

Environmental Management System reference documentation shall be listed under an "Approved Reference Documents" section of the library catalog, maintained under the authority of the Environmental Program Manager (reference the Kent County Dept. of Public Works Environmental Management System Procedure 2-12-P02 Establishing and Maintaining Libraries).

#### 5.6 *Environmental Management System Records*

Environmental Management System Records shall be maintained under the authority of the department or unit administrative personnel.

#### 5.7 *Approved Forms*

An Environmental Management System Approved Forms list shall be maintained under the authority of the Environmental Program Manager (Reference the Kent County dept. of Public Works Environmental Management System Procedure 2-11-P02 Controlling Records).

#### 5.8 *Corrective Action*

A master CAR list shall be maintained under the authority of the Environmental Program Manager (Reference the Kent County Dept. of Public Works Environmental Management System Procedure 2-15-P01 Controlling Non-Conforming Conditions and 2-15-P02 Managing Corrective and Preventive Action).

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## **6.0     RESPONSIBILITIES**

The responsibility for Kent County Dept. of Public Works Library(s) rests with each of the Department Management Representatives responsible and shall be coordinated with the Environmental Program Manager for technical consistency.

## **7.0     DOCUMENTS**

### **7.1     *Related Documents***

7.1.1 Kent County Dept. of Public Works Environmental Management System Manual  
Section 2 Management System

7.1.2 Kent County Dept. of Public Works Environmental Manual Section 5 Environmental Work Processes

## **8.0     RECORDS**

### **8.1     *Required Records***

A listing of library documents is to be maintained by the Environmental Program Manager and responsible Management or Supervisory personnel to facilitate retrievability of the documents and up-to-date information.

### **8.2     *Records Control***

All records, if required, pertaining to this procedure shall be controlled in accordance with the Environmental Management System Procedures 2-11-P02, Controlling Records.

### **8.3     *Transmittal Confirmations***

Transmittal Confirmations are Environmental Management System Records and shall be maintained in accordance with the Kent County Dept. of Public Works Environmental Management System Procedure 2-11-P02 Controlling Records.

## **9.0     ATTACHMENTS**

### **9.1     None**

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## 10.0 REVISION HISTORY

Revision No.	Effective Date	Responsible Person	Description of Revision	Appv. By
0		Jim Newton	Initial Issue	

# **SAMPLE EMS DOCUMENTATION**

## ***ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) MANUAL***



***City of Gastonia WWTP – EMS Manual***

# **City of Gastonia Wastewater Treatment Division**



## **ISO 14001 - Environmental Management System Manual**

**Prepared By: Beth Eckert, Industrial Chemist**  
**Approved By: Coleman Keeter, Superintendent of WWTD**

**Signature: \_\_\_\_\_**

**Revision #: 0 / Revision Date: December 7, 1999 / Effective Date: January 1, 2000**

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## SECTION I - INTRODUCTION

The City of Gastonia's Wastewater Treatment Division (GWWD) is responsible for treating Gastonia's industrial, commercial, and domestic wastewater to meet state and federal limits for discharge to the surface waters as well as for proper management of its biosolids. Gastonia has two wastewater treatment operations that are designated for these activities. Additionally, the WWTD manages a resource recovery farm and the operations of a contractor that is responsible for land application of biosolids at permitted locations throughout the county.

### Wastewater Treatment Operations

Crowder's Creek Wastewater Treatment Plant, 5642 South York Road, Gastonia, NC 28054

Long Creek Wastewater Treatment Plant, 3000 Long Creek Disposal Plant Rd., Dallas, NC 28034

Resource Recovery Farm, 208 Goldmine Rd., Bessemer City, NC

In order to improve management of environmental issues related to these operations and sites, the Gastonia Wastewater Treatment Division has implemented an ISO 14001 environmental management system. This Environmental Management System (EMS) manual presents the environmental policy, structure of the management system, and related documents for the Gastonia Wastewater Treatment Division.

The EMS is designed according to the requirements set forth by the ISO-14001 Standard. Sections 4.2-4.6 parallel the ISO-14001 Standard number scheme. Each of these sections provide specific information or instructions necessary for complying with the requirements in the ISO-14001 Standard.

The EMS manual is the responsibility of the EMS Project Coordinator and is to be reviewed yearly and updated as appropriate, see review procedure (**EMS-0100.001**). The issued copies of this manual are under control of the EMS Project Coordinator.

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## **SECTION II - DISTRIBUTION, REVISION, AND CONTROL**

The distribution of this manual shall be conducted manually by the EMS Project Coordinator. The version accessed on the computer system shall be considered the “controlled” copy. There will be a “Master Copy” in hard copy form maintained by the EMS Project Coordinator. This copy shall have the signature of the Superintendent of the Wastewater Treatment Division and the date of approval.

Any part of the manual in hard copy form, other than the master copy and controlled copies issued per the distribution list, shall be considered “UNCONTROLLED” and will have “\*\*\*\*THIS IS AN UNCONTROLLED COPY OF A CONTROLLED DOCUMENT\*\*\*\*” automatically inserted at the bottom of each page when printed.

The manual will be reviewed a minimum of once per year. The EMS Management Team shall have the responsibility for reviewing the manual annually in **October**.

Recommendations for revisions shall be forwarded to the EMS Project Coordinator. The EMS Project Coordinator will be responsible for all revisions to the manual. He/she will maintain a record of external distribution, if applicable, and maintain obsolete copies on file.

This manual will be controlled manually and in accordance with the Gastonia Document Control Procedure (**EMS-0100.002**).

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## **SECTION 4.2 - ENVIRONMENTAL POLICY**

The EMS Management Team will review the policy annually. If revisions are necessary, the revised policy will be adopted by the City Council in **November**.

The policy will be made available to the public through the City of Gastonia's web-site. The policy will be communicated to all WWTD employees through training events.

### **CITY OF GASTONIA WASTEWATER TREATMENT DIVISION**

#### **ENVIRONMENTAL POLICY**

The City of Gastonia Wastewater Treatment Division is committed to the implementation of a management system which will minimize negative and advance positive impacts on the environment and which will control the wastewater treatment costs to be borne by the consumer. Believing these goals to be fully achievable, the Wastewater Treatment Division is firmly committed to and will:

- Establish procedures to promote continuing improvement of compliance with all applicable environmental laws and regulations.
- Establish procedures to continue efforts to strengthen and improve knowledge of environmental issues within the Division.
- Seek optimal operation of the Wastewater Treatment Facilities to minimize environmental impacts where technically and economically feasible, even if not required by law or regulation.
- Promote cooperation and understanding with the public, customers, and governmental agencies in developing economically feasible and environmentally sound wastewater treatment objectives.
- Continue to promptly report all noncompliance issues in accordance with applicable governmental reporting requirements, evaluate causes of noncompliance, and implement corrective actions.
- Establish procedures for periodic review of environmental compliance with all laws and regulations, as well as with the ISO 14001 Environmental Management System.
- Establish procedures to ensure all that employees are knowledgeable of, and understand and comply with, all applicable environmental laws and regulations.
- Promptly correct any practice or condition not in compliance with this policy.

All employees are expected to comply with the spirit as well as the letter of this policy.

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## SECTION 4.3 - PLANNING

Location and description of all reference materials has been identified the Document Control / Training Matrix (**EMS-0101.002A**) which is located electronically at **U:\ISO\Forms\EMS-0101.002A** and a hard copy in the office of EMS Coordinator.

The following definitions are provided in the ISO-14000 Standards.

### 4.3.1 Environmental Aspects

**Environmental Aspects** - Elements of the organization's activities, products or services which can interact with the environment.

**Environmental Impact** - Any change to the environment, whether adverse or beneficial, wholly or partially resulting from an organization's activities, products or services.

**Significant Environmental Aspect** - An environmental aspect that has or can have a significant environmental impact.

GWWD has identified all known environmental aspects and related impacts of our activities and products that we can control and have influence over in order to determine which can have a significant impact on the environment.

The EMS Management Team shall review at least annually per the EMS Review procedure (**EMS-0100.001**) the list of environmental aspects and impacts and identify the significant aspects using the Aspects and Impacts procedure (**EMS-0100.003**), aspects ranking form (**EMS-0101.003A**), significant aspects determination form (**EMS-0101.003B**), and the significant aspect listing form (**EMS-0101.003C**). The EMS management team will also review aspects and impacts of any new operations, activities, or laws for significance determination. Significant aspects will be considered in setting the environmental objectives.

The EMS management team will consist of the following personnel:

ORC Crowder's WWTP  
 Lab Supervisor Crowder's WWTP  
 ORC Long Creek WWTP  
 Lab Supervisor Long Creek WWTP  
 ORC of Biosolids  
 Assistant Superintendent of WWTD  
 Pretreatment Coordinator

The list of environmental aspects, related impacts and identified significant aspects and impacts will be kept up to date. The list will be comprehensively reviewed annually in November.

### 4.3.2 Legal and Other Requirements

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The Gastonia Wastewater Treatment Division is required to comply with a variety of legal and other requirements that are applicable to the environmental aspects of its activities, products or services. The following personnel identify environmental regulations and requirements, which govern GWWTD activities and products:

**ORC Crowder's WWTP**

Environmental laws relating to treatment and discharge of industrial and municipal wastewater.

**Lab Supervisor Crowder's WWTP**

Environmental laws relating to the testing of wastewater samples.

**ORC Long Creek WWTP**

Environmental laws relating to treatment and discharge of industrial and municipal wastewater.

**Lab Supervisor Long Creek WWTP**

Environmental laws relating to the testing of wastewater samples.

**ORC of Biosolids**

Environmental laws relating to the management and application of wastewater treatment plant biosolids.

**Assistant Superintendent of WWTD**

Environmental laws relating to the operation of an industrial/municipal wastewater treatment plant.

**Pretreatment Coordinator**

Environmental laws related to handling wastewater discharged from commercial or industrial dischargers.

The following resources are used to identify applicable legal and other requirements:

**Documents:**

CFR books (Code of Federal Regulations) – covers solid waste, hazardous waste, air emission, wastewater, stormwater, biosolids regulations.

EPA Standard Testing Methods – Covers EPA certified wastewater testing procedures.

**Regulatory Personnel:** direct mailings and discussions with regulators. Representative personnel attend seminars.

**Software:** Application which is designed for fast regulatory searches. (CD-ROM)

Internet Access – Review of EPA newsletter

**Regulator Training:** plant personnel shall attend Conferences and workshops with key environmental responsibility on a regular basis to maintain up-to-date knowledge of current and upcoming regulatory requirements.

Periodic permitting and reporting requirements are documented and reviewed for accuracy as identified in the Legal and Other Requirements listing (**EMS-0101.001**).

All employees affected by new regulations will be trained on those regulations by their supervisor according to individual training matrices (**EMS-0101.002B**).

### 4.3.3 Objectives and Targets

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GWWTDD establishes environmental objectives and targets annually during **December** by considering at least the following information:

- Legal and other requirements
- Significant environmental aspects and impacts
- Prevention of pollution
- Technological options
- Financial, operational, and business requirements
- GWWTDD environmental policy
- Views of interested parties

These objectives and targets will be documented and maintained according to the objectives and targets procedure (**EMS-0100.007**) and the EMS review procedure (**EMS-0100.001**). Objective and targets may be amended at other times during the year as a result of new or revised operations, activities, and/or regulations.

#### **4.3.4 Environmental Management Programs**

GWWTDD has developed an EMS program entitled Objectives and Targets Improvement Plan (**EMS-0101.007**) that shall be used to achieve its objectives and targets. This program shall include:

- designation of responsibility for achieving the objectives and targets at each relevant function and level of organization;
- means and time-frame by which they are to be achieved.

The objectives, targets, and programs will be reviewed and approved annually per the EMS review procedure (**EMS-0101.001**) by the Superintendent of the WWTD during the budget development process. The EMS Project Coordinator is responsible for their maintenance and reporting. Projects that relate to new developments and new or modified activities, products or services, the program shall be amended where relevant to ensure that environmental management applies to such projects.

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## **SECTION 4.4 - IMPLEMENTATION & OPERATION**

### **4.4.1 Structure and Responsibility**

GWWTD has defined, documented and communicated the roles, responsibility and authority of personnel in order to facilitate effective environmental management. These are identified in the roles and responsibilities listing (**EMS-0100.006**).

The Superintendent of the WWTD is responsible for assuring that adequate human resources, other resources, and training are available to implement and control this EMS.

The EMS Project Coordinator is responsible for ensuring that this EMS is established, implemented and maintained and for reporting on its performance to top management

### **4.4.2 Training, Awareness and Competence**

All employees within the WWTD will be trained on the EMS policy and records maintained in the office of the EMS Coordinator. Based on the annual aspects and impacts analysis each department shall identify training needs for those employees whose work activities may create a significant impact upon the environment. All procedural training records will be maintained in each area supervisor's office. Relevant procedures identified in the Document Control / Training Matrix (**EMS-0101.002A**) shall be established and maintained to ensure employees are aware of:

- The importance of conformance with the environmental policy and procedures and with the requirements of the Environmental Management System;
- The significant environmental impacts, actual or potential of their work activities and the environmental benefits of improved personal performance;
- Their roles and responsibilities in achieving conformance with the environmental policy and procedures and with the requirements of the Environmental Management System, including emergency preparedness and response requirements;
- The potential consequences of departure from specified operating procedures.

Personnel performing the tasks, which can cause a significant environmental impact on the environment, shall be evaluated for competence on the basis of appropriate education, training, and/or experience as identified in the roles and responsibilities listing (**EMS-0100.006**). Records of competency and individual training are maintained in the individual training matrices (**EMS-0101.002B**). During annual performance reviews employees will be evaluated on their demonstration of environmental competency.

All new employees will receive training on EMS related procedures, policy and requirements of the environmental management system upon commencement of work with the City of Gastonia via PowerPoint presentation located at **U:\ISO\training\ISOawareness training**. New or revised procedures affecting existing personnel will be communicated upon implementation.

Training requirements of contractor personnel will be established under the terms of contract. Follow-up will be done annually to evaluate conformance with the contract. City of Gastonia maintenance personnel will be

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trained on procedures identified in the Document Control / Training Matrix.

#### **4.4.3 Communication**

GWWTDD has developed procedures for handling internal communications between the various levels and functions of the department. The EMS Project Coordinator is responsible for communicating information relative to the EMS to upper management and the EMS Team. The EMS Team is responsible for communicating information to affected employees.

GWWTDD has documented a procedure for receiving, documenting, and responding to relevant communications from external parties (**EMS-0100.008**).

GWWTDD has recorded its decision on considering processes for external communication of its significant environmental aspects. GWWTDD will provide a listing of its significant environmental impacts to any interested party. Additionally, the GWWTDD has held a seminar for external parties to discuss significant environmental impacts.

#### **4.4.4 Environmental Management System Documentation**

GWWTDD has developed an EMS documentation system that is organized in a four-tier structure

EMS Manual	Level 1
EMS Procedures	Level 2
Standard Operating Procedures/Work Instructions	Level 3
Forms/Records	Level 4

Each of these levels will provide direction to relative documents in other levels.

#### **4.4.5 Document Control**

GWWTDD has established a Document Control System that controls all documents and data that relate to satisfying the elements of the ISO 14001 standard and ensures:

- they can be located;
- they are periodically reviewed, revised as necessary and approved for adequacy by authorized personnel;
- the current versions of relevant documents are available at all locations where operations could significantly impact the environment;
- obsolete documents are assured against accidental use and those retained for legal or knowledge preservation suitably identified;
- they are legible, dated, readily identifiable and properly stored.

GWWTDD has developed procedures and responsibilities concerning the creation and modification of various types of documents as identified in the Document Control Procedure (**EMS-0100.002**).

#### **4.4.6 Operational Control**

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GWWTDD has identified operations and activities associated with the identified significant environmental aspects. Each department shall plan these activities, including maintenance, in order to ensure they are carried out under specified conditions by:

- Establishing and maintaining documented standard procedures to cover situations where their absence could lead to deviations from the environmental policy, objectives and targets;
- Stipulating operating criteria in the procedures;
- Establishing and maintaining procedures related to supplies and services used by the plant and communicating relevant procedures and requirements to suppliers and contractors.

All operating procedures are identified in the document control / training matrix (**EMS-0101.002A**)

#### **4.4.7 Emergency Preparedness and Response**

GWWTDD has developed an emergency response plan (**WLC-0100.010 and WCR-0100.010**) and a Risk Management Plan (**EMS-0100.010**) which deals specifically with Chlorine and/or Sulfur dioxide related emergencies. The plan identifies the potential for accidents and emergency situations and the corresponding response. The plan also considers the prevention and mitigation of any environmental impacts associated with accidents or emergency situations.

These plans shall be reviewed at least every three years.

### **SECTION 4.5 CHECKING AND CORRECTIVE ACTION**

#### **4.5.1 Monitoring and Measurement**

GWWTDD has established and maintains a system for measuring and monitoring the key characteristics of our operations that can have a significant impact on the environment. This system includes recording information to track performance, relevant operational controls and conformance with the established objectives and targets.

- Monitoring equipment shall be calibrated and maintained and records kept in the office of the responsible supervisor.
- A documented procedure (**EMS-0100.009**) has been established to periodically evaluate compliance with relevant environmental legislation and regulation.

#### **4.5.2 Non-Conformance and Corrective Action**

GWWTDD has established and maintains a procedure to determine the need for and implementing corrective and preventative actions (**EMS-0100.004**).

- All employees are empowered to report, document and take temporary action for any nonconformities relating to environmental impacts.
- Corrective and preventative actions are taken to eliminate the causes of actual or potential

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nonconformities and are appropriate to the magnitude of problems and commensurate with the environmental impact.

- Changes to documented procedures resulting from corrective or preventative actions are recorded.

### **4.5.3 Records Management**

GWWD has established procedures for identification, maintenance, and disposition of all environmental records. These records are kept to demonstrate conformance to GWWD's EMS, the ISO 14001 standard and applicable regulations.

- Environmental records are legible, identifiable, and traceable to the corresponding activity or product involved.
- Environmental records are stored in a way that they are retrievable and protected against damage, deterioration or loss.
- The retention times for all environmental records are established and recorded.

Refer to the Document Control / Training Matrix (**EMS-0101.002A**) and /or the Legal and Other Requirements (**EMS-0101.001**) documents for retention times and locations.

### **4.5.4 Environmental Management System Audits**

GWWD has established and maintains procedures to carry out periodic audits of the environmental management system (EMS). The EMS audit procedure (**EMS-0100.011**) will determine the scope, frequency, methodology, and responsibility for the audits.

- The purpose of audits is to determine if the EMS has been properly implemented and maintained.
- Results of the EMS audits are reviewed with the Management Review Board (MRB).

## **SECTION 4.6 MANAGEMENT REVIEW**

The Management Review Board (MRB) reviews the EMS quarterly to ensure continuing suitability, adequacy, and effectiveness of the EMS. This review is documented.

The MRB addresses the possible need for changes to the policy, objectives, and other elements of the EMS. Observations, conclusions and recommendations are document for necessary action and changes

# **SAMPLE EMS DOCUMENTATION**

## ***OPERATIONAL CONTROL***



***Charleston CPW – Operational Control Procedure***  
***City of San Diego WWC – Operational Control Procedure***

# CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE

*The on-line version and secured hardcopy are the controlled documents. The secured hardcopy will be identified by an "Official Document" stamp giving date of distribution. Any and all other documents are uncontrolled. Contact EMS Program Manager for revision level status.*

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<b>Effective Date:</b>	<b>October 1, 2000</b>	<b>Page 1 of 3</b>
<b>Revision: 1</b>	<b>Identification Number: EMS – 4. 4. 6 (A)</b>	
<b>Title:</b>	<b>Operational Control Procedure</b>	
<b>Prepared By:</b>	<b>EMS Procedures Subcommittee</b>	
<b>Reviewed By:</b>	<b>EMS Management Steering Committee</b>	
<b>Approved By:</b>	<b>William E. Koopman Jr., General Manager John Cook PE, Assistant General Manager</b>	
<b>Date Approved:</b>	<b>August 25, 2000</b>	

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## **0.0 Requirement: ISO 14001, Sub Clause 4.4.6 Operational Control**

### **1.0 Purpose**

This procedure is used to ensure monitoring and operating instructions are properly identified, issued and controlled, and to ensure that all relevant documents necessary for the proper operation of the process are present.

### **2.0 Scope**

This procedure applies to all associates who issue and control monitoring and operating instructions at CPW where EMS requirements are in place.

### **3.0 Responsibility & Authority**

- 3.1 The department head (or designee) is responsible for the approval, revision, and issuance of monitoring and operating instructions and ensuring associates have the necessary training to perform the job.

### **4.0 Procedure**

- 4.1 Issue and Control of Monitoring and Operating Instructions



- 4.1.1 Prior to placing new or modified monitoring or control equipment in service the department head will direct the drafting of monitoring or operating instructions for that operation.

NOTE: Monitoring and operating instructions should include the following information where relevant:

- Monitoring and Operating Instruction Title and Identification Number
- Process or equipment name
- Operating criteria
- Startup instructions
- Shut down instructions
- Emergency operation (loss of power, SCADA, etc)
- Inspection and test instructions
- Corrective action instructions
- Revision date and approval
- Safety requirements
- Housekeeping
- Location of manufacturer's reference material

- 4.1.2 The draft monitoring and operating instructions are submitted to the appropriate supervisor(s) to review for operability, completeness, consistency and clarity.

- 4.1.3 The supervisor(s) note any changes or concerns and forwards back to the individual or team that prepared the draft.

- 4.1.4 The individual or team that prepared the draft makes the necessary corrections.

- 4.1.5 The department head reviews and approves the new or revised monitoring and operating instructions.

- 4.1.6 The department head (or designee) issues the monitoring and operating instructions to the appropriate supervisor(s).

- 4.1.7 The supervisor(s) ensures the operators have the necessary training, including the environmental impacts or potential consequences in deviating from the specified work instructions.
- 4.1.8 The department head (or designee) ensures the documents are available and controlled at all appropriate locations, the most current versions are available for use, and obsolete versions are prevented from further use.
- 4.1.9 Obsolete documents to be retained for legal and or knowledge preservation are removed and marked “Obsolete.”

## **4.2 Related Documents and Data**

- 4.2.1 Training Records
- 4.2.2 Records of Change to related documented procedures
- 4.2.3 Manufacturer’s Reference Material
- 4.2.4 Document Control Procedure

## **DD-SEOP 4.4.6**

### **OPERATIONAL CONTROL**

#### **1.0 PURPOSE AND SCOPE**

The procedure for identifying operational controls for operations and activities that are identified as potential critical environmental impacts. This procedure applies to all situations at the MWWD WWC Division, or areas within the control or influence by MWWD WWC Division, where its absence could lead to deviations from the division environmental policy and the objectives and targets.

#### **2.0 RESPONSIBILITY AND AUTHORITY**

It is the responsibility of the EMS Environmental Management Representative, Section Managers and their designees to prepare appropriate procedures ensuring effective management of critical control points and for those situations where the absence of a procedure could lead to deviations from the Environmental Policy and the objectives and targets.

#### **3.0 PROCEDURE**

- 3.1 Operational control procedures shall be established by the WWC for operations that have been identified to have significant environmental impacts and/or where their absence could result in significant environmental impacts.
- 3.2 The Operational control procedures shall be established and maintained by the appropriate WWC Section and may cover the following:
  - Process operations, maintenance and equipment specifications criteria
  - Methods of chemical storage, handling and transfer
  - Spill and clean up
  - Management and disposal of wastes
  - Operation and Maintenance of Sensitive or Critical Environmental Control Equipment
- 3.3 Most operational control and maintenance procedures shall be established as the third level documentation (excepting those activities determined to be inter-departmental in nature and that apply to multiple sections within WWC). All procedures shall be made available at the point of use. (refer to Documentation matrix in Document Control procedure, DD SEOP 4.4.5)

- 3.4 Operational control procedures shall also make reference to existing documented Departmental and/or Division Instructions that cover at least the following or in whose absence may lead to a deviation from the environmental policy:
- Purchase or transfer of goods and services and use of external resources
  - Hazardous tasks
  - Hazardous materials
  - Maintenance of calibrated safety equipment
- 3.5 The relevant EMS requirements, including the WWC Environmental Policy, shall be communicated to suppliers and contractors.
- 3.6 The Section manager reviews the “Standard Operating Procedures” (DD-SEOP 4.4.4) for environmental protection and control content and makes improvement to existing procedures, or develops new procedures as required.
- 3.7 New or revised SOP’s are to be processed by the Document Control Group (DCG). DD-SEOP 4.4.5.
- 3.8 Procedures are reviewed and revised based on corrective actions recommended as the result of environmental incidents (such as spills or releases) or environmental audits; when new processes or products are introduced, or when new environmental regulations are identified that could reasonably affect MWWD WWC Division operations.
- 3.9 The Section Managers are responsible for approving Section specific Standard Maintenance Procedures (SMP’s) or Operating Procedures (SOP’s) where the absence of SOP’s could lead to a significant environmental impact.

#### **4.0 REFERENCES**

DD-SEOP 4.3.1, Environmental Aspects and Impacts Identification

DD-SEOP 4.3.3, Establishment of Environmental Objectives, Targets and Programs

DD-SEOP 4.4.4, Standard Environmental Operating Procedures

DD-SEOP 4.4.5, Document Control

DD-F-002.0, Aspects and Impacts Register

# **SAMPLE EMS DOCUMENTATION**

## ***EMERGENCY PREPAREDNESS***



***Charleston CPW – Emergency Preparedness & Disaster Recovery Procedure***  
***City of San Diego WWC – Emergency Preparedness and Response Procedure***

## **CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE**

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<b>Revision: 2</b>	<b>Identification Number: EMS – 4. 4. 7</b>	
<b>Title:</b>	<b>Emergency Preparedness &amp; Disaster Recovery Procedure</b>	
<b>Prepared By:</b>	<b>EMS Procedures Subcommittee</b>	
<b>Reviewed By:</b>	<b>EMS Management Steering Committee</b>	
<b>Approved By:</b>	<b>William E. Koopman Jr., General Manager John Cook PE, Assistant General Manager</b>	
<b>Date Approved:</b>	<b>August 25, 2000</b>	

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### **0.0 Requirement: ISO 14001, Sub Clause 4.4.7 Emergency Preparedness/Response**

#### **1.0 Purpose**

To minimize disaster impacts and return CPW back into operation in a safe, quick, cost effective and environmentally sensitive way.

#### **2.0 Scope**

ISO 14001, sub clause 4.4.7, applies to the need to identify, prevent, and respond to emergencies and the period of time following the emergency event.

#### **3.0 Responsibility & Authority**

- 3.1 Executive management is responsible for ensuring that an emergency preparedness program is implemented and for approving the emergency preparedness plans.
- 3.2 Section heads and department heads are responsible for plan development, plan implementation and emergency preparedness team selection.
- 3.3 Emergency Preparedness Team(s) (response/disaster recovery) are responsible for dealing with immediate threats to associates, the public and the environment and assisting in returning CPW back to functional operation

## **4.0 Procedure**

### **4.1 Up-front Activities**

- 4.1.1 The department head/section head will initiate the process to prepare a disaster response/recovery plan. The department head will assemble the Emergency Response/Disaster Recovery Team(s).

After review and approval of the plan(s), the team(s) will test the plan as conditions allow and, communicate the plan to associates and document. At least annually, or in the event of a disaster, review the plan and recommend plan modifications as necessary.

- 4.1.2 Duties of the Department Head/Facility Manager  
The duties of the department or facility manager include the following aspects:
- a) Identify potential risks to facilities and processes;
  - b) Identify and implement Best Management Practices (BMP's) where necessary (i.e., Process Safety Management, Risk Management, Hurricane Preparedness, etc.);
  - c) Establish incident reporting procedures;
  - d) Maintain, testing and inspection equipment according to specified frequency and procedures;
  - e) Establish emergency preparedness training for facility personnel;
  - f) Review new and significantly modified equipment or processes for modification of emergency response plans as necessary;
  - g) Manage emergency response change to new or modified equipment or processes;
  - h) Review at least annually, facility procedures for release prevention and emergency response;
  - i) Review and update hazard assessments at least every five years or as a result of changes;
  - j) Audit compliance of prevention programs at least every three years as required by the EPA Risk Management Plan and OSHA's Process Safety Management Standard.

- 4.1.3 Identification/Impact Assessment of Facility Resources  
The department head or facility manager will inventory critical operations and available resources to identify and assess potential risk in the event the facility is destroyed in part or in total. This inventory should identify what critical items may need to be quickly replaced. The inventory should include, a description of required personnel skills, necessary chemicals or equipment, and identification of vendor sources.
- 4.1.4 Impact Minimization Strategies  
An impact minimization strategy will be prepared for the identified resources that are critical and have a high likelihood of being impacted or destroyed. For example, this may include special training, backup files, backup communications or operations at other locations, additional containment around some chemicals and wastes, temporary containment (sandbagging) around critical equipment, bracing, and fire suppression equipment.
- 4.1.5 Phone Numbers and Contacts  
There should be documented emergency numbers in both the emergency plan and disaster recovery plan. As a minimum the following should be included:
  - a) department head, section head, or facility manager
  - b) relevant civil defense contacts, (fire, police, toxic release contacts, FEMA, etc)
  - c) executive management
  - d) safety manager
- 4.1.6 Routine Inspections  
The department's status, resources and supplies in terms of disaster recovery should be inspected frequently. As resources or facilities change, preparedness and recovery plans should be updated.
- 4.1.7 Off-site Disaster Headquarters  
The affected department head, with input from the section head and/or executive management, will establish a working headquarters and necessary communication links.



4.1.8 Production and environmental control equipment will be appropriately maintained with preventive maintenance controls.

4.1.9 Critical Data  
Regulatory records, account data, etc. should be backed up and stored in a protected environment. Software systems, such as, Supervisory Control and Data Acquisition (SCADA) essential to production will be backed up with the ability to function at other locations. Paper type files, which are critical to the operation should be copied and filed at a backup location or stored electronically or on microfiche, in a fire-resistant location.

4.1.10 Supplies  
Some supplies should be purchased before a disaster, for the health and safety of the associates. Supplies should include such items as food, water, bedding, flashlights, tools, first aid kits, etc. for at least a three-day period.

4.1.11 Environmental Protection Supplies  
Environmental protection supplies, such as spill cleanup materials, personal protection equipment, over-pack drums, etc. and materials required in regulatory plans such as the Risk Management Plan (RMP) will be maintained.

4.1.12 Emergency Plan Training and Distribution  
It is important to prepare and distribute emergency plans to essential associates before a disaster occurs. Training on emergency response and disaster recovery will be given and documented to team members and associates involved in work that may cause significant environmental impact.

## **4.2 Disaster Control**

4.2.1 During and Immediately Following a Disaster  
After the immediate crisis is under control, the following activities should occur. These steps are considered as recovery actions.

4.2.2 Convene the Emergency Response Team/Disaster Recovery Team

The ERT/Disaster Recovery Team will transition into a disaster recovery team (DRT). Additional members will/may be added at this time and include management, operations, safety, purchasing and finance members.

4.2.3 Area Inspections

The DRT will do an initial audit for safety hazards and, if any are found, notify associates to stay out of the affected area until corrected. Additional inspections would be made to assess facility or equipment operability and preliminary cost estimates on financial damage.

4.2.4 Associate Needs

After assessing immediate safety needs, longer-term needs should be considered. This may include information to families or help in locating families. This may include additional supplies such as food, water, blankets, and temporary shelter for associates, etc.

4.2.5 Insurance Companies/Relief Agencies

Proper insurance representatives/federal agencies should be called to schedule site visits as soon as possible.

4.2.6 Human Resource Skills Bank

Associates who are able to report to work should report to an identified individual or location so that recovery needs can be matched with associate skills and assigned appropriate recovery tasks.

4.2.7 Reestablish Process Control and Utilities

During the disaster some utilities may have shut down by accident or design. The DRT will work with the water and wastewater departments and with the gas and electric companies to restore service.

#### 4.2.8 Reestablish Communications

CPW personnel will need to be directed during communication outages. Telephone company personnel may be needed to reestablish critical phone lines. It may be necessary to use cellular phones and radios for initial communications. Once communications are reestablished, a call-center should be set up to respond to associate and public questions and concerns.

#### 4.2.9 Facility Repairs

Start work in restoring damaged facilities, based upon critical need.

#### 4.2.10 Reassess and verify that chemical and waste systems are working

and not causing adverse environmental impacts. If a potential problem is noted, it should be checked out, and if necessary, immediately corrected.

#### 4.2.11 Reestablish SCADA and Computer Systems

Some operations are totally dependent upon computer systems. These must be repaired or relocated as quickly as possible. Computer systems that support customer services should be reestablished as quickly as possible.

#### 4.2.12 Replacement of Critical Files

Any essential files that may have been destroyed should be re-created by off-site or back-up files. This is especially important concerning certain customer or associate personnel files.

#### 4.2.13 Reestablish Financial and Human Resources System

It may be necessary to shift certain financial and HR systems, such as compensation and benefit administration to another site for a period of time.

#### 4.2.14 Media

Contacts from, or to the media, should be directed by CPW executive management or an authorized designee.

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### **4.3 Post Incident Investigation**

4.3.1 In the event of an emergency situation or accident that has significantly impacted the environment or which has the potential to do the same, a post incident investigation will be conducted. An emergency situation or accident requiring a post incident review is one in which there is the potential to be a major violation of a regulatory permit, a major impact to public health or services, or a major impact to the environment. The need for a post incident investigation shall be determined by executive management or the appropriate department head and a post incident review team shall be assembled accordingly to conduct the investigation. Such post incident investigations shall evaluate the cause(s) of the incident and identify factors which should be evaluated for preventing or mitigating the impacts of future incidents, including revising its emergency preparedness and response procedures and documenting the results.

#### **4.3.2 Corrective Action Plan**

The affected department shall prepare a corrective action plan (if necessary) and submit the plan and subsequent plan amendments to the Post Incident Review Team for review and approval. The EMS program manager (or designee) shall track the activities of the corrective action plan and perform verification surveillance(s) upon completion of corrective action plan activities and submit recommendation(s) for closure to the Post Incident Review Team.

### **4.4 Related Documents and Data**

- 4.4.1 Emergency Response Plans
- 4.4.1 Inventory of Damaged Facilities
- 4.4.2 Spill Report Records.
- 4.4.3 Injury Report Records
- 4.4.4 Emergency Response and Disaster Recovery Team records
- 4.4.5 FEMA, Damage Survey Report Forms
- 4.4.6 Post Incident Review Report
- 4.4.7 Corrective Action Plan

## **DD-SEOP 4.4.7**

### **EMERGENCY PREPAREDNESS AND RESPONSE**

#### **1.0 PURPOSE AND SCOPE**

This document defines the procedures to establish and maintain plans and to identify the potential for, and responses to, incidents and emergency situations on employees, public and the environment and for preventing and mitigating the likely illness, injury and environmental impacts that may be associated with them.

This procedure and associated operational controls address or consider impacts and degree of risks associated with environmental aspects, issues related to illness and injury, and corrective actions associated with the following:

- accidental discharges to water and land
- accidental emissions to the atmosphere
- specific environmental and/or ecosystem effects associated with accidental releases
- unsafe work practices and/or conditions

The procedure also specifies the process utilized by the company to periodically review emergency preparedness and response procedures in light of operational changes, and following the occurrence of an unexpected incident or event.

#### **2.0 DEFINITIONS**

#### **3.0 RESPONSIBILITIES**

#### **4.0 PROCEDURE**

##### **4.1 Identification of Emergency Situation**

4.1.1 The General Water Utility Supervisor, Standby and Duty Supervisors, and EMR (as appropriate) shall be responsible to identify potential emergency response situations where environmental impacts may result.

4.1.2 The identification of potential emergency situations shall be reviewed once a year during the emergency drills or when a new response and containment activity is being introduced.

4.1.3 The emergency situations shall be updated in the above mentioned applicable documents.

##### **4.2 Emergency Response Procedures**

4.2.1 Procedures covered by this DD-SEOP are described in detail in the WWC Divisions Sewer Overflow Response and Tracking Plan (SORTP). This document contains sewer overflow response and notification procedures for use at the operations level in

specifically responding to emergency events. Additionally, the document is intended for use by Division management in determining the types and levels of resources necessary to respond to and mitigate emergency situations. The SORTP and relevant attachments are therefore incorporated by reference into this DD-SEOP.

4.2.2 The referenced documents provide the following information for adaptation into this procedure:

- Regulatory Requirements
- Receiving Information Regarding Sewer Overflows
- Dispatching Crews to Sewer Spill Sites
- Definitions of incidents and responder requirements
- Emergency management structure and organization-spill event notification listing
- Emergency procedures are provided for each of the categories of operational scenarios identified
- Post-emergency response notification and reporting procedures and investigation follow up
- Sanitary Sewer Overflow Tracking Database

4.2.3 The above mentioned applicable documents shall be made available either by hard copies or soft copies to the following:

- Section Manager
- Duty Supervisor
- Central Operations Management Center (COMC)
- Sewer Alarm Monitoring Section (SAMS)
- City of San Diego Dispatch Center (Station 38)

4.3 Emergency Training

4.3.1 Awareness training of the emergency response and spill notification procedures shall be provided to all new employees during the orientation briefing conducted by the Section Manager and I&OS department.

4.3.2 Appropriate WWC staff shall be trained in their roles during an emergency situation. Practical exercise (where appropriate) shall be conducted to familiarize with their roles. The I&OS Division and respective WWC Section Managers shall coordinate training of the ERT members.

4.4 Emergency drills and situations

4.4.1 Emergency drills involving hazardous materials usage should be carried out according to a pre-determined schedule. The I&OS Division together with the ERT shall schedule such drills involving partial or all the operations at each location.

4.4.2 The EMR and ERT Rep shall discuss the results of the emergency drills or cause of the emergency situations and minutes of the meeting shall be maintained.

- 4.4.3 The I&OS Department and WWC ERT Rep shall meet to discuss the occurrence of an emergency situation. An investigation shall be compiled for an occurrence of an emergency situation to be submitted to the authority or/and management.
- 4.4.4 The above mentioned applicable documents shall be reviewed and revised according after each emergency drills or occurrence of emergency situation.
- 4.5 Mitigating Environmental Impacts.
  - 4.5.1 Relevant Emergency Plan procedures have been established to handle emergency situations.
  - 4.5.2 Fire fighting equipment and spill kits are made available to handle fire and spill emergency situations respectively. First aid supplies are also made available in the event of emergency situations. Procedures have been established for maintenance of fire fighting equipment.
  - 4.5.3 If there is an emergency and after bringing under control, employees will be able to go back to their workplace to inspect for any damages upon clearance and instruction from ERT Coordinator(s).
  - 4.5.4 Appropriate Section Managers shall arrange for contractors to clear the debris and to clean up the area. All debris shall be disposed appropriately according to legislated requirements.
  - 4.5.5 Appropriate Section Managers shall decide whether to form an inquiry committee to investigate into causes and recommend remedial actions to prevent future occurrence.

## **5.0 REFERENCES**

MWWD Departmental Health and Safety Manual

MWWD Major Incident Response Plan

City of San Diego Emergency Operations Plan

City of San Diego Employee Emergency Handbook

City of San Diego Hazardous Waste Management Guide

WWC Sewer Overflow Response and Tracking Plan

Section-specific emergency contingency response plans

# **SAMPLE EMS DOCUMENTATION**

## ***MONITORING AND MEASUREMENT***



***Charleston CPW – Monitoring and Measuring Key EMS Characteristics Procedure***  
***City of Gastonia WWTP – Monitoring and Measuring Procedure***  
***City of Eugene WWTP – Monitoring and Measurement Procedure***  
***City of San Diego WWC – Calibration of Environmental Measurement  
and Test Equipment***



# **CPW ENVIRONMENTAL MANAGEMENT SYSTEM PROCEDURE**

*The on-line version and secured hardcopy are the controlled documents. The secured hardcopy will be identified by an "Official Document" stamp giving date of distribution. Any and all other documents are uncontrolled. Contact EMS Program Manager for revision level status.*

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<b>Effective Date:</b>	<b>October 1, 2000</b>	<b>Page 1 of 2</b>
<b>Revision: 0</b>	<b>Identification Number: EMS – 4.5.1 (A)</b>	
<b>Title:</b>	<b>Monitoring and Measuring Key EMS Characteristics</b>	
<b>Prepared By:</b>	<b>EMS Procedures Subcommittee</b>	
<b>Reviewed By:</b>	<b>EMS Management Steering Committee</b>	
<b>Approved By:</b>	<b>William E. Koopman, Jr., General Manager</b> <b>John Cook PE, Assistant General Manager</b>	
<b>Date Approved;</b>	<b>August 25, 2000</b>	

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## **0.0 Requirement      ISO 14001 1996-E, Sub Clause 4.5.1 Monitoring and Measuring**

### **1.0 Purpose**

This procedure describes the process for the scheduled monitoring and measurement of key characteristics of the organization's environmental management system activities.

### **2.0 Scope**

This procedure addresses collection of environmental data associated with operations and activities that have the potential to have a significant environmental impact.

### **3.0 Responsibility and Authority**

- 3.1 The department head is responsible for submitting a monthly operating report (MOR) which describes the key characteristics of the EMS and the status of the objectives and targets and associated improvement programs.
- 3.2 The department supervisor(s) are responsible for generating environmental monitoring and measurement data to be submitted in the Monthly Operating Report (MOR).
- 3.3 Executive management shall review the monthly operating reports to assure continuing suitability and effectiveness of the EMS.

### **4.0 DEFINITIONS AND ACRONYMS**

**EMS**   Environmental Management System

**Environmental Key Characteristics** - an element of an operation or activity that includes a measurement or an inspection process the results of which supports evaluation of environmental performance of objectives and targets.

**Monitoring** - a systematic process of watching, checking, observing, inspecting, keeping track of, regulating or otherwise controlling key parameters and characteristics of a department's management activities to determine conformance with a specific standard or other performance requirement, or to measure progress toward its environmental objectives and targets.

**Measurement** - a systematic method for estimating, testing, or otherwise evaluating key parameters and characteristics of a department's management activities to determine conformance with a specific standard, other performance requirement.

## **5.0 Procedure**

### **5.0.1 Monthly Operating Report (MOR)**

A monthly report shall be established for department heads/supervisors to submit monitoring and measuring information to support performance of the EMS. The report is to be structured as a minimum to:

- Provide status of environmental management programs designed to fulfill environmental objectives and targets,
- Provide status of performance indicators as related to targeted timeframes,
- Provide compliance status of environmental operating permits issued by environmental regulatory agencies.

### **5.0.2 Performance Tracking**

Environmental data collected to reflect environmental performance is to be maintained in such a manner to allow the evaluation of progress toward realizing environmental objectives and targets.

## **6.0 Related Documents**

Environmental Aspects,  
Objectives, Targets, and Improvement Programs  
Legal and Other Requirements  
Operating Permits

## **7.0 RECORDS**

Monthly Operating Report

<b>Standard Operating Instruction – EMS-0100.013</b> <b>Name: Monitoring and Measuring</b>	<b>Corresponding Requirements:</b> ISO Standard: 4.5.1 NBP Element: 13 EMS Manual: 4.5.1
Prepared By: Beth Eckert, EMS Coordinator	Revision Date: 8/11/03 Revision #: 6
Approved By: Beth Eckert, EMS Coordinator  Signature:	Effective Date: 8/1/00  Page 1 of 3

## EMS Monitoring and Measuring Standard Operating Procedure

### 1.0 Purpose

1.1 The following procedure provides guidance for preparing quarterly reports which will be reviewed during quarterly Management Review Board meetings in order to monitor and measure the Division's significant impacts on the environment, biosolids program performance at critical control points, compliance, progress on objectives and targets, and results of compliance and EMS audits. During the Management Review Board meeting the Division Manager WWT and Director of Public Works and Utilities shall use all provided information to ensure the continuing suitability, adequacy and effectiveness of the EMS.

### 2.0 Associated Equipment

2.1 None

### 3.0 Associated Reference Material

- 3.1 Data Trend data base
- 3.2 Spill reports
- 3.3 Incident Reports
- 3.4 Division utility bills
- 3.5 Compliance Audits
- 3.6 Summary of Activities and NPDES Permit Limit/SOC Violations (EMS-0101.009)
- 3.7 SIU notices of violations
- 3.8 Hazardous waste manifests
- 3.9 Biosolids bills
- 3.10 Laboratory data
- 3.11 External communications logs
- 3.12 EMS Audits
- 3.13 Training matrix (EMS-0101.002B)

3.14 Corrective and Preventative Action reports (EMS-0101.004) (reviewed at C/PAR meetings by MRB which are held at least bi-monthly)

3.15 Monitoring and Measuring Forms (as MRB Reports on the Read-only drive)

- EMS-0101.013A EMS Status Report
- EMS-0101.013B Long Creek Operations
- EMS-0101.013C Crowders Creek Operations
- EMS-0101.013D Long Creek Laboratory
- EMS-0101.013E Crowders Creek Laboratory
- EMS-0101.013F Biosolids
- EMS-0101.013G Pretreatment
- EMS-0101.013H Facility Maintenance

#### **4.0 Procedure**

4.1 During each management review board meeting, data will be presented to track the performance of the environmental management system.

4.1.1 At a minimum this review will track the division's performance regarding the significant environmental impacts in each area, biosolids program performance at each critical control point, compliance, objectives and targets, compliance audits, EMS audits, operational controls, and the suitability, effectiveness, and adequacy of the EMS.

4.2 Each area supervisor or designated personnel shall complete the appropriate monitoring and measuring forms (EMS-0101.013\_), by utilizing necessary resources as identified above.

4.3 All forms shall be submitted to the EMS coordinator or other designated personnel via e-mail prior to the management review board meeting. The EMS coordinator or designated personnel shall compile all data provided into a single report to be provided at the management review board meeting.

4.3.1 The quarterly report shall be provided to members of the MRB at least 5 days prior to the meeting to ensure that each member has sufficient time to review the information.

4.4 Supervisors will be responsible for providing an oral presentation regarding the status in their area. The EMS Coordinator or designated personnel shall be responsible for reporting on the status of EMS activities.

4.4.1 The EMS Coordinator or designated back-up shall issue periodic updates via e-mail, memo, or bulletin board regarding updates to EMS level documentation, EMS training, and status of EMS audits.

4.5 The EMS Coordinator or designated personnel shall document the MRB meeting with meeting minutes. The minutes of this meeting shall be filed along with a copy of the Quarterly report in the EMS Coordinators files and maintained on the U: drive.

4.5.1 The EMS Coordinator will create C/PARs for any actions, which are requested during the MRB meeting to ensure follow-up.

## 5.0 Revision History:

Revision		C/PAR #	Reason for Revision	Description of Revision
Date	#			
5/20/02	3	EMS-0074	External Auditor	Removal of Deviations statement from Level II procedures
5/20/02	3	EMS-0084	C/PAR	Added a modification history section
10/14/02	4	EMS-0116	C/PAR-NBP	Added NBP requirements and element number
10/14/02	4	EMS-0119	External auditor – C/PAR	Include a time frame to have the MRB report to members to ensure enough time to properly review the document
1/21/03	5	29	MRB	Requires EMS Coordinator of designee to issue EMS updates monthly to include audit status. Allowed for less restrictive time frame on C/PAR meetings to at least bi-monthly instead of monthly.
8/11/03	6	171	CPAR	Changed EMS Update to periodically instead of monthly. Added Facility Maintenance Monitoring & Measuring Form

## CITY OF EUGENE - WASTEWATER DIVISION

### Procedure

<b>Subject:</b>	Monitoring and Measuring		<b>Document No:</b>	WW-00015
<b>Last Reviewed By:</b>	Management Team	<b>Original Date:</b>	8/8/00	<b>Revision No:</b> 2
<b>Approved By:</b>	Management Team		<b>Date Approved:</b>	7/17/03

### Purpose

The purpose of this procedure is to outline how the Division will ensure appropriate methods are in place to monitor and measure performance against the environmental objectives and targets of the management system.

### Scope

This procedure covers methods to ensure the reliability of data, calibration of relevant equipment and instruments, and compliance with the management system.

### Definitions

- [QA/QC](#)
- [EMS Program Coordinator](#)

### Safety Requirements

All specific safety requirements will be included or referred to in specific work instructions.

### Procedure (Include reporting requirements and precautionary steps in this section)

#### Accountability:

#### Responsibility:

Management Team Supervisors	Track performance of environmental monitoring and measurement activities that are applicable to the Division's management system.
EMS Team Management Team	Identify appropriate environmental performance indicators for the Division that are relevant to the Division's activities, consistent with our environmental policy, practical, cost effective and technologically feasible.
EMS Manager	Develop process to periodically evaluate compliance with relevant environmental and legislative regulations.  Analyze results of measuring and monitoring systems to determine areas of success and to identify activities requiring corrective action and improvements.
Laboratory Supervisor Environmental Data Analyst	Review Quality Assurance Plan annually.

Supervisors	<p>Ensure that relevant work section QA/QC procedures are consistent with the approved QA/QC plan.</p> <p>Develop and maintain appropriate processes and instructions to ensure reliability and documentation of data such as calibration of instruments, test equipment and software or hardware sampling.</p>
EMS Program Coordinator	<p>Develop and maintain work instructions for relevant monitoring and measurement activities to document performance related to the Division's environmental objectives and targets.</p>
Division Staff	<p>Inform supervisors of any activities or irregularities that may have an impact on monitoring or measuring requirements related to the environmental management system.</p> <p>Perform calibration of instrumentation and test equipment, confirms hardware and software sampling is functional.</p> <p>Assist in the development of work instructions for monitoring and measurement activities.</p> <p>Perform monitoring and measurement activities such as :</p> <ul style="list-style-type: none"> <li>▪ Measure mercury level in influent</li> <li>▪ Measure paper goods purchased</li> <li>▪ Measure vehicle fuel usage and mileage</li> <li>▪ Monitor purchased paper goods for recycle content</li> <li>▪ Measure annual power consumption</li> <li>▪ Monitor quantities of non-recyclable waste</li> </ul>
Environmental Data Analyst	<p>Review and interpret environmental data.</p>

## References

[Quality Assurance Plan](#)

## **DD-SEOP 4.5.1**

### **CALIBRATION OF ENVIRONMENTAL MEASUREMENT AND TEST EQUIPMENT**

#### **1.0 PURPOSE AND SCOPE**

This procedure applies to the major sections that comprise the Wastewater Collections (WWC) Division of the City of San Diego's Metropolitan Wastewater Department (MWWD). It describes a controlled process for calibrating and maintaining those environmental measurement and test equipment (EM&TE) items that are used specifically for the gathering of data to directly support monitoring and measurement requirements that are invoked as permit conditions or as other legal or regulatory requirements, or that support MWWD initiatives related to beneficial use of waste byproducts. In addition, processes for monitoring and calibration of equipment used in support of EMS performance measurement are covered by this procedure. This procedure does not apply to measurement or test devices used for other routine operational or process monitoring or measurement purposes.

Calibration and maintenance of EM&TE is required so that the accuracy and precision of the environmental data collected (and potentially, the calculations based on the data) are known and defensible.

#### **2.0 DEFINITIONS**

##### **2.1 Calibration**

Calibration is defined as the periodic comparison of an instrument or measurement device to a standard of known and greater accuracy, in order to assure the continuity and accuracy of measurements or data. If no calibration standards meeting the definition in Section 2.2 exist, then the basis or justification of calibration methods must be separately documented as noted in Section 4.

##### **2.2 Calibration Standard**

A calibration standard is defined as a device or reference used as a means of comparison for quantitatively determining the accuracy, precision, and repeatability of instruments or measurement devices. Calibration standards must have a known and traceable relationship to nationally recognized standards such as those maintained by the National Institute of Standards and Technology (NIST).

#### **3.0 RESPONSIBILITIES**

##### **3.1 Section Electrical Support**

Staff assigned to major WWC Division operations have primary responsibility for the development of section-specific EM&TE calibration/maintenance requirements matrices, and for implementation of the calibration and maintenance program requirements defined by this procedure.



### 3.2 Environmental Management Representative (EMR)

The EMR is responsible for monitoring the development of section-specific EM&TE calibration/maintenance requirements matrices, and for providing technical assistance to individual Section Managers where necessary.

### 3.3 Section Managers

Section Managers or their designees are responsible for review and approving applicable section-specific EM&TE calibration/ maintenance requirements and for ensuring that appropriate resources are made available to ensure that calibration and maintenance are performed within their established intervals.

## 4.0 PROCEDURE

The procedure consists of the following steps:

- 4.1 Individual Section Managers shall, with the assistance of the EMR, and the Operations and Inspection Section prepare a section-specific inventory of EM&TE for which calibration and maintenance under this procedure is required.
- 4.2 For each equipment item so identified, calibration and maintenance requirements (i.e., establishment of equipment identifier, calibration/maintenance interval, calibration/maintenance procedure or process, and source of calibration or maintenance, if performed externally) shall be developed and documented in the WWC Division's Computerized Maintenance Management System (CMMS). Requirements are described further in the following paragraphs.
- 4.3 Unique numerical identifiers shall be assigned to all EM&TE items. All EM&TE with expired calibration or maintenance due dates shall, where practicable, be tagged with an "Out of Service" tag pending calibration, maintenance, or withdrawal from the EM&TE inventory.
- 4.4 The required calibration and/or maintenance intervals shall be established, based on the manufacturer's recommendations, the level of projected use, the usage environment, and usage history. Maintenance intervals may be less than or equivalent to, but not greater than, calibration intervals.
- 4.5 The recall date shall represent the date by which the EM&TE items must be withdrawn from service for calibration and/or routine maintenance.
- 4.6 Specific calibration and maintenance instructions shall be provided, based, upon the EM&TE manufacturer's recommendations. Calibration standards to be used should be identified; if no calibration standards exist, then the basis or justification of the calibration methods must be separately documented

Any limitations on use shall be specifically defined.

- 4.7 The completed EM&TE Calibration Measurement Requirements shall be presented to the Section Manager or their designee for review and approval; all comments shall be resolved to the reviewer's satisfaction.
- 4.8 The Section Manager shall coordinate the calibration and/or maintenance of all EM&TE identified with Electrical Support and Planner/Scheduler staff. Where practicable, a calibration tag shall be physically attached to the device indicating calibration recall date and the equipment asset number. Calibration may be performed under the direction of the section manager, either internally or externally (by qualified calibration service subcontractors). Regardless of whether the calibration is performed internally or externally by a subcontractor, all reference standards shall be traceable to nationally recognized standards. If no standards exist, written justification of the calibration method shall be documented in the "step description" column of the CMMS procedures.
- 4.9 The EM&TE Calibration Measurement Reports shall be used by the Section Managers to track ongoing EM&TE calibration/maintenance status. A record copy shall be forwarded to the EMR, when requested, for information and retention in the environmental records in compliance with Section 5.3 of the EMP.
- 4.10 The Electrical Support staff shall notify Section Managers in advance of any calibration and maintenance activity to allow for the planning of any required system downtime or instrument changes. Environmental Coordinators may initiate internal Corrective Action Requests (CPAR see DD-SEOP 4.5.2, "Non-Conformance and Corrective and Preventive Action") or purchase orders as appropriate to control specific equipment recall, calibration, and maintenance activities.

Failure to complete schedule calibration or maintenance within the interval defined on the section's EM&TE Calibration Measurement Requirements Procedures shall be considered to be a nonconformance, subject to the corrective and preventive action processes defined by DD- SEOP 4.5.2, "Non-Conformance Corrective and Preventive Action."

## **5.0 REFERENCES**

WWC Division Environmental Management Plan  
Section 4.6.1, Environmental Action Requests  
Section 5.1, Monitoring and Measurement  
Section 5.2, Control of Non-conformance's and Corrective and Preventive Action  
Section 5.3, Records

DD-SEOP 4.5.2, Nonconformance and Corrective and Preventive Action

**TABLE 1 (DD-SEOP 4.5.1)**

**ENVIRONMENTAL MEASUREMENT AND TEST EQUIPMENT CALIBRATION AND MEASUREMENT MATRIX**

Section: \_\_\_\_\_

Approved By: \_\_\_\_\_

Approval Date: \_\_\_\_\_

Equipment Name	Control No.	In Service Y/N	Calibration Interval	Maintenance Interval	Recall Date	Calibr/Maint. Date	Limitation on Use	Calibr/Maint. Instructions

\* may not be greater than calibration interval

Form # DD-F-012.0

Form Rev. Date: 6/02

# **SAMPLE EMS DOCUMENTATION**

## ***EMS INTERNAL AUDIT***



***City of Eugene WWTP – Internal EMS Audit Procedure***

***City of San Diego WWC – Internal EMS Audit and Compliance Verification Procedure***



## CITY OF EUGENE – WASTEWATER DIVISION

### Procedure

<b>Subject:</b>	Compliance Audit			<b>Document No:</b>	WW-00465N
<b>Last Reviewed By:</b>	Management Team	<b>Date Prepared:</b>	8/8/01	<b>Revision Date:</b>	8/8/01
<b>Approved By:</b>	Management Team	<b>Date Approved:</b>	8/17/01	<b>Next Review Date:</b>	2/1/05

### Purpose

This procedure describes the process used by the Division to schedule and complete regulatory compliance audits.

### Scope

Procedure applies to all Division facilities and activities. Compliance audits will evaluate the Division's compliance with relevant environmental legislation and regulations.

### Definitions

- [Audit](#)

### Safety Requirements

All specific safety requirements will be included in specific work instructions.

### Procedure (Include reporting requirements and precautionary steps in this section)

#### Accountability:

EMS Manager

#### Responsibility:

Schedule compliance audit. An external consultant will perform audits every five years at a minimum.

Manage process to identify external consultant to perform compliance audit in accordance with City purchasing procedures.

Manage contract with external consultant.

Management Team

Review compliance audit report. Initiate any necessary corrective action in accordance with Non-Conformance and Corrective Action Procedure.

### References

[Non-Conformance and Corrective Action Procedure](#)

## **DD-SEOP 4.5.4**

### **ENVIRONMENTAL MANAGEMENT SYSTEM AUDITS AND COMPLIANCE VERIFICATION**

#### **1.0 PURPOSE AND SCOPE**

This procedure establishes minimum requirements for planning, performing, and documenting periodic internal audits of the ISO 14001-based environmental management system (EMS) established for the City of San Diego's Metropolitan Wastewater Department (MWWD), Wastewater Collections (WWC) Division.

#### **2.0 DEFINITIONS**

##### **2.1 EMS Audit**

An EMS audit is defined as a planned and documented investigation performed in accordance with written procedures or checklists for the purpose of verifying, by examination and evaluation of objective evidence, that applicable elements of an ISO 14001-based EMS have been developed, documented, and effectively implemented in accordance with specified requirements.

##### **2.2 Lead EMS Auditor**

A Lead EMS Auditor is a qualified and trained individual who is authorized to plan, organize, and direct EMS Audits of WWC Division section and activities; to report findings and observations; and to evaluate the adequacy of corrective and preventive action. At a minimum, WWC Division Lead EMS Auditors shall have received ISO 14001 internal EMS Auditor training and have participated in an internal audit, as an auditor.

##### **2.3 EMS Auditor**

An EMS Auditor is defined as a qualified and trained individual who is authorized to perform specific EMS Audit functions under the direction of a Lead EMS Auditor. At a minimum, each auditor must attend a documented training session conducted by the Lead EMS Auditor that presents the detailed requirements of this procedure and discusses their roles in the planned audit.

##### **2.4 EMS Audit Observer**

An EMS Audit Observer is an EMS audit team member assigned to observe audit activities under the direction of the Lead EMS Auditor. At the Lead EMS Auditor's discretion, technical observers may be requested to perform specific audit functions in relation to their area of expertise. At a minimum, each observer must attend a documented training session conducted by the Lead Auditor that presents the detailed requirements of this procedure and discusses their roles in the planned audit.

## 2.5 Finding

A finding is defined as a deficiency or lack of compliance with any element of an EMS. All findings must be formally resolved to assure effective correction of the observed condition and the adoption of system improvements or preventive measures to reduce or preclude the likelihood of recurrence.

## 3.0 RESPONSIBILITIES

### 3.1 Environmental Management Representative

The Environmental Management Representative (EMR) is responsible for establishing audit schedules and for designation or selection of Lead EMS Auditors who are independent of the day-to-day management of the plant functions to be audited. The EMR shall also review and approve EMS audit plans and reports.

### 3.2 Lead EMS Auditor

The Lead EMS Auditor is responsible to the EMR for the organization, planning, and direction of EMS audits, as well as the selection, training, and supervision of the audit team. The Lead EMS Auditor prepares audit plans and reports, and is responsible for evaluating and recommending any required corrective and preventive action responses resulting from audit findings.

### 3.3 EMS Auditors or Observers

Auditors are responsible for assisting in audit preparation, conducting audit investigations, and reporting results in compliance with this procedure, under the direction of the Lead EMS Auditor. When requested, audit observers shall assist in audit preparation and in conducting audit activities in areas in which they have specific expertise.

### 3.4 Section Managers

Section Managers of audited section or group shall provide time, work space, and personnel as necessary to support the performance of EMS audits, and are responsible for supervising the prompt and effective resolution of any audit findings.

## 4.0 PROCEDURE

The audit process is described in the following steps, and is summarized in the flowchart presented in Figure 1:

- 4.1 Audit Scheduling: EMS Audits shall be conducted at least annually. Audit frequency may be increased at the discretion of the EMR or when specifically requested by upper management.
- 4.2 Audit Notification: The Lead EMS Auditor shall notify the managers or section heads of the audited organization at least ten days prior to the projected audit date. The

notification shall set the date, time, location, and method of the opening meeting, and shall request that appropriate section personnel participate. Audit notification, opening and closing meeting requirements may be met via e-mail communication.

4.3 Audit Plan: The Lead EMS Auditor shall prepare an audit plan. At a minimum, the audit plan shall include the following:

- the audit number (consecutive, by calendar year);
- a statement of the audit objectives; an identification of the specific section areas being audited;
- a discussion of any special emphasis or focus; references to appropriate plans, procedures, or requirements documents;
- the date(s) of the audit; and an identification of the audit team and the members' assigned roles.

Records of previous audits and corrective and preventive action requests for the audited organization shall be reviewed prior to preparation of the audit plan. Identification of trends or repeated problems identified during the review shall be reflected in the scope of the audit, as appropriate. Any areas of special emphasis shall also be noted in the audit plan.

Audit team selection shall be based on consideration of the particular areas of emphasis for the audit and the qualifications and capabilities of the prospective team members. Audit team members should be sufficiently independent of the day-to-day management of the audit areas that they are responsible for so that the potential for a conflict of interest is minimized. Completed audit plans shall be submitted to the EMR and affected section managers for review and comment prior to the audit.

4.4 Audit Checklist Preparation: The Lead EMS Auditor shall prepare or direct the preparation of an audit checklist based on the elements of the ISO 14001 standard. EMS auditors or observers may be assigned the preparation of specific checklist sections, especially in areas for which they will assume auditing responsibilities. Checklist content shall be consistent with the scope of the audit presented in the Audit Plan. Copies of the checklist, the audit plan, and any required reference specifications, procedures, or plans shall be distributed to the audit team prior to the audit. The Lead EMS Auditor shall brief the audit team on the general scope of the audit and the details of the audit plan, and shall discuss audit checklist assignments prior to the pre-audit opening meeting.

4.5 Opening Meeting: The pre-audit opening meeting shall be conducted by the Lead EMS Auditor, and shall be attended by the audit team members and appropriate representatives of the audited section. Participation shall be documented. The scope of the audit and duties of the auditors or any technical observers shall be briefly presented. Questions from the audited organization shall be answered, proper lines of communication established, and a time set for the closeout meeting. These requirements may be met via e-mail communications.



- 4.6 Conducting the Audit: Each auditor shall proceed with the investigations required by their assigned portion of the checklist. General guidance on auditing methods is provided in Attachment 1 of this procedure. Auditing methods may include records review, interviews with individual WWC Division staff members, and/or direct observation of plant activities.

The audit team shall meet and report on audit progress as directed by the Lead EMS Auditor. Observed conditions that require immediate corrective action shall be promptly reported to the management of the audited group or organization. Demands on resources and time may not be increased beyond the level presented in the opening meeting without first discussing and obtaining approval of such requests from the affected section manager.

When the checklist items have been completed, the audit team shall meet and present their potential findings to the Lead EMS Auditor. The Lead EMS Auditor shall review the auditors' input, obtain additional clarification where required, and prepare or direct the preparation of a draft list of potential findings.

- 4.7 Closing Meeting: A draft list of potential findings and observations shall be presented to representatives of the audited organization in a brief post-audit closing meeting. Participation shall be documented. Discussion shall generally be limited to the presentation of findings and the clarification of any misunderstandings. These requirements may be met via E-Mail communications.

- 4.8 Audit Report Preparation: After the post-audit meeting, the auditors shall prepare final copies of their completed checklist sections and submit them to the Lead EMS Auditor. The Lead EMS Auditor shall prepare a formal audit report, which shall include the following items: a brief description of the audit scope; the identification of the audit team and key personnel contacted from the audited organization; a general statement summarizing the effectiveness of the EMS; and a brief discussion of any findings.

Each finding shall also be recorded on a Corrective/Preventive Action Request (C/PAR) form in compliance with the requirements of DD-SEOP 4.5.2, Non-Conformance and Corrective and Preventive Action. The audit report and any C/PAR forms shall be submitted to the management of the audited organization for appropriate action, with copies provided to the EMR and the Deputy Director, WWC Division.

- 4.9 Review of Corrective/Preventive Action Responses and Audit Closeout: The Lead EMS Auditor shall participate in the development of corrective and preventive actions as necessary to ensure that each finding or observation has been adequately addressed. When proposed corrective actions have been determined to be acceptable, the Lead EMS Auditor shall notify the EMR and the affected section managers that the audit is considered to be closed.
- 4.10 Audit Documentation: Once the audit has been closed, the Lead EMS Auditor shall forward a complete copy of the audit documentation to the environmental records in compliance with Section 5.3 of the WWC Division EMP. At a minimum, audit

documentation shall include copies of the audit notification memo, the audit plan, audit opening and closing meeting participation sheets, the completed audit questionnaire, the audit report, copies of any closed C/PAR forms, and an audit closeout memorandum.

#### 4.11 External Audit/Compliance Verification

##### Audit Requirements

4.11.1 The Management Representative or assigned person is to administer the compliance audit activities. Notification must be sent to personnel in the WWC, and he/she shall hold a meeting with the External Auditor to clarify the purpose of the Audit, and areas or functions to be inspected.

4.11.2 The type of External Audits are listed as follows and is not exhaustive:

- a. ISO 14001 certification and surveillance audits.
- b. Internal City Initiated Audit.
- c. External Compliance Audit.

4.11.3 During the course of the audit, an area representative shall accompany the Auditor(s), and answer general questions about the section activities, processes and services.

4.11.4 During the audit and exit meeting, the WWC Division representative(s) should neither agree nor disagree to carry out any recommendations or requirements necessitating a capital appropriations request or budget approval process prior to implementation.

4.11.5 The Auditing parties will submit their findings in writing. Findings should be written in a factual manner that does not reflect conjecture, supposition or unwarranted conclusions. Findings should be marked "Confidential," and forwarded to respective WWC Section Heads who will ensure that distribution is limited to only those persons with a specific need for the information. A copy of the report must be forwarded to the EMR.

4.11.6 After the site receives a written audit report from the auditor, and any clarification needed, the respective WWC Section Heads, EMR and other MWWD representatives will discuss the recommendations and requirements with affected site management. A corrective action plan, which addresses all findings, should be developed by responsible departments. The Corrective/Preventive Action Report (C/PAR) shall be raised as per DD-F-006.0 accordingly.

4.12 All External audit reports and corrective action plans shall be retained as required.

## **5.0 REFERENCES**

WWC Division Environmental Management Plan

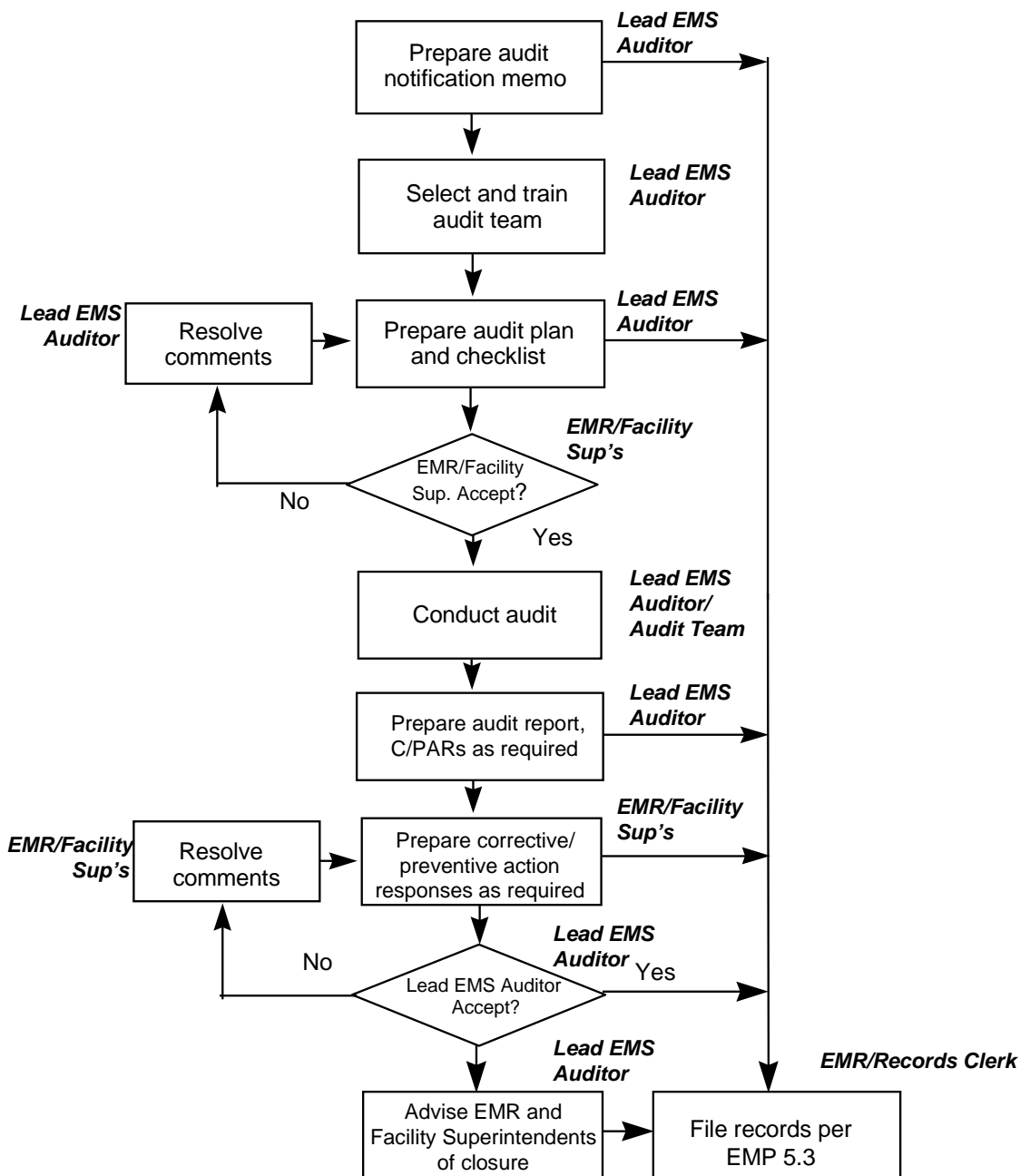
Section 5.2, Control of Non-conformances and Corrective and Preventive Action

Section 5.3, Records

Section 5.4, Environmental Management System Audit

DD-SEOP 4.5.2, Non-Conformance and Checking Corrective and Preventive Action

**Figure 1**  
**EMS Audit Process**



C/PAR - Corrective/Preventive Action Request  
 EMP - (WWC Division) Environmental Management Plan  
 EMR - Environmental Management Representative  
 EMS - Environmental Management System

**(DD-SEOP 4.5.4)**

**ATTACHMENT 1:**

**SUPPLEMENTARY GUIDANCE FOR CONDUCTING EMS AUDITS**

**1.0 GENERAL CONSIDERATIONS**

This attachment provides general guidance that should be considered by the Lead EMS Auditor, individual auditors, and the audit team as a whole during the onsite portion of an EMS audit.

**1.1 Audit Team Behavior**

The overall demeanor of the audit team must be perceived as ethical, professional, objective, and fair. The Lead EMS Auditor is responsible for monitoring the activities of the audit team; unacceptable behavior by any audit team member should not be permitted. The Lead EMS Auditor should take whatever action is necessary in response to unacceptable behavior, up to and including removing the responsible individuals from the audit team.

**1.2 Overcoming Negative Perceptions**

Even in the best situations, an auditor may encounter a certain amount of distrust, anxiety, anger, fear, or obstinacy on the part of the audited organization or section. These kinds of negative responses will hinder the progress of the audit and will detract from the usefulness of the information obtained, unless an effort is made to establish a positive (or at least neutral) setting for the audit. The Lead EMS Auditor must make a concerted effort to establish a productive setting for the audit, from the first verbal contacts, through the opening meeting, daily debriefings, and closing meeting. Because the audit team's primary mission is to obtain reliable information about the performance relative to specific written standards, audit team members must work to gain a functional level of cooperation in order to gain access to objective evidence.

**1.3 Negative Situations**

Extremely negative responses by audited personnel in an audited organization are rare, but they can occur, and can be difficult to handle when they do. If such a situation should occur, audit team members should politely break off the line of inquiry and bring the matter separately to the attention of the Lead EMS

Auditor, who should attempt to resolve the issue with the section manager. Regardless of the situation, audit team members must never show anger.

If a situation is truly unresolvable, the Lead EMS Auditor should cancel the remainder of the audit, hold a brief closeout meeting with the audited section manager or superintendent to explain the reasons for cancellation, and advise that the audit will be rescheduled after negotiating a new audit date. If at this time the management representative asks the Lead EMS Auditor to continue the audit, the Lead EMS Auditor should state the conditions that are necessary. If the conditions are accepted, then the audit team should resume the audit. If no

request to continue the audit is made, or if the conditions for continuing the audit are not accepted, then the Lead EMS Auditor should direct the audit team to cease its activities.

#### 1.4 Preconceptions

To the extent possible, audit team members must set aside any preconceptions about the audited section capabilities, regardless of whether they are good or bad. No matter how justifiable such assumptions might be, the audited section strengths and weaknesses must express themselves as part of an objective process. Audit team members must never go into an auditing situation with the intention of finding something (or nothing) wrong. If the auditing process is not open and objective, areas of significant strength or weakness may be missed and the accuracy of the information gained from the audit may be compromised.

#### 1.5 Flexibility

The Lead EMS Auditor should be free to redirect the emphasis of the audit in process, as necessary to concentrate the audit team's resources on critical areas of investigation that may come to light in the audit. The areas of emphasis in the audit plan and the checklists should be followed to the extent possible, but if, in the Lead EMS Auditor's judgment, the situation warrants redirection, it is appropriate to concentrate on specific areas of the checklist and not investigate others; another audit may be performed at a later date to investigate other areas of the program.

#### 1.6 Documentation

The audit checklist should be formatted to facilitate inquiries and note-taking, but each audit team member should use the note-taking methods that they are most comfortable with. Reference copies of the WWC Division EMP and its supporting SEOPs and other documents should be readily available to the team.

### 2.0 AUDITING METHODS: "DO'S" AND "DON'TS"

Audit team members should:

- be prepared; the EMP sections and procedures associated with assigned area of inquiry should be read and understood beforehand;
- stay in charge of any interviewing situation, and steer conversations away from long monologues or irrelevant discussions;
- recognize that the presence of the audit team is by nature disruptive;
- listen and observe more than they talk;
- thank audited personnel for their assistance when there are no more questions;
- take good notes that accurately describe the individuals contacted, the documents reviewed, and the observations made;
- verify or qualify the extent of potential problems by increasing the sample of records evaluated, or by conducting additional interviews;
- frame audit questions in language that the audited organization or department will understand;
- keep questions brief and focused;

- clarify questions if they seem to be misunderstood;
- complement the audited Section when particular strengths are observed;
- ask open-ended questions to open up lines of inquiry or to gain access to additional information; such questions should be phrased using "who", "what", "when", "where", "why", "how", and "which" (none of which can be answered "yes" or "no"); and
- ask closed questions to confirm a point; closed questions should be phrased using words like "is", "do", "has", "can", "will", and "shall", which will result in a "yes" or "no" answer.

Audit team members should not:

- talk too much, argue, use profanity, or discuss personalities or the results of other audits;
- criticize personnel from the audited Section, especially in front of their co-workers or supervisors;
- disagree with other audit team members or the Lead EMS Auditor in front of the audited Section staff; any such discussions should be reserved for the audit team members only;
- permit representatives of the audited Section to see the audit team's working notes or checklists;
- obtain records or documents without the permission or participation of the audited Section;
- identify a problem in front of the audited section personnel as anything other than something that should be looked at further; notes should be taken and specific concerns verified by reviewing a larger sample of information;
- discuss the decision regarding whether the problem requires more investigation or represents a finding without first discussing the issues separately with the Lead EMS Auditor first; or
- make comments regarding the inadequacy of the audited section's EMS processes or procedures, unless objective evidence suggests that audited section's written requirements are not being fulfilled.

# **SAMPLE EMS DOCUMENTATION**

## **NONCONFORMANCE AND CORRECTIVE ACTION**



*City of Gastonia WWTP – Corrective/Preventative Action Procedure*  
*City of San Diego WWC – Nonconformance and Corrective/Preventative Action Procedure*  
*City of Eugene WWTP – Nonconformance and Corrective Action Procedure*



<b>Standard Operating Instruction – EMS-0100.004</b> <b>Name: Corrective/Preventative Action Report</b>		<b>Corresponding Requirements:</b> EMS Manual: 4.5.2 ISO Standard: 4.5.2 NBP Element: 14
Prepared By: Beth Eckert, Environmental / Administrative Manager		Revision #: 7 Revision Date: 3/9/04
Approved By: Beth Eckert, Environmental / Administrative Manager		Effective Date: 3/9/04
Signature:		Page 1 of 3

### Corrective / Preventative Action Standard Operating Procedure

#### 1.0 Purpose

- 1.1 This procedure is to develop and implement a corrective and preventative action program to monitor, report, investigate and mitigate any impacts caused by the occurrence of non-routine incidents and/or near misses and nonconformance with the Division's environmental policy or any related procedures.

#### 2.0 Associated Equipment

- 2.1 None

#### 3.0 Associated Documents

- 3.1 *Corrective/Preventative Action Report* [EMS-0101.004](#)  
 3.2 *Document Control Procedure* [EMS-0100.002](#)  
 3.3 *City of Gastonia: EMS Manual EMS-0100.000*  
 3.4 *City of Gastonia EMS Manual: EMS-0100.000 and Policy*  
 3.5 *ISO 14001 Standard: ANSI/ISO 14001-1996 Environmental management systems – Specifications with guidance for use*  
 3.6 *National Manual of Good Practice for Biosolids*  
 3.7 *National Biosolids Partnership Biosolids EMS Guidance Manual*

#### 4.0 Procedure

- 4.1 Corrective/Preventative Action Reports (C/PAR) will be used to identify potential needs for corrective and/or preventative actions identified during EMS review, external and internal regulatory audits, internal and external EMS audits, and following the occurrence of an event that may have a significant environmental impact or a deviation from a current procedure.
- 4.2 All Corrective/Preventative Action Reports should be completed within 5 working days following first knowledge of an incident or near miss.
- 4.3 Any employee is empowered to create a C/PAR following an incident or near miss or at any other time the employee wishes to make recommendations for changes to existing procedures or policies and/or to identify the need for addition policies and/or procedures.
- 4.4 Area supervisors or trained internal auditors are required to develop Corrective/Preventative Action reports for incidents or near misses reported by employees or identified by other means unless an employee has already done so.
- 4.5 While completing the C/PAR the author should use the following guidance (If another report form such as the state spill report, the internal supervisor's report, or any other detailed report form is required that completely

satisfies the intent of any of the following sections you may complete that section by typing or writing “See attached form” and attaching a copy to this report):

- 4.5.1 List personnel who identified the problem.
- 4.5.2 Describe the problem. If procedure or EMS documents and/or procedures are a focus of the findings then they should be identified by their document control #, when possible. If prompted by an audit the auditor must specify which section of the ISO Standard and/or NBP EMS Guidance Manual the finding is related to.
- 4.5.3 Provide a root cause analysis, which identifies the source of the problem.
- 4.5.4 Describe Corrective/Preventative Action.
  - 4.5.4.1 If unable to determine what corrective or preventative actions must be taken to resolve the problem, skip this section. If it's an emergency issue, the supervisor must contact the appropriate personnel to immediately resolve the problem.
  - 4.5.4.2 If able to determine what corrective or preventative actions must be taken to resolve the problem, take appropriate actions. If long-term action is required submit report without completion date for this section.
- 4.5.5 The author must submit the completed corrective action report to the EMS Coordinator, or designee, along with any and all support data for submittal to the Management Review Board (MRB) at the CPAR meeting.
- 4.6 MRB will determine if the corrective action that has taken place is sufficient.
  - 4.6.1 Internal auditors will determine if proposed corrective actions are sufficient for C/PARs generated as a result of audit findings.
  - 4.6.2 If sufficient and completed, the report will be signed and returned to the EMS Coordinator for proper filing.
  - 4.6.3 If insufficient or not completed, the Division Manager or designee may assign a new or revised corrective/preventative action to take place, establish a desired completion date, and assign necessary resources i.e. staff time, funds, etc...
  - 4.6.4 CPARs will continue to be reported on during each CPAR meeting until the corrective actions have been completed to the satisfaction of the MRB.
- 4.7 While modifying a procedure, as a result of a C/PAR, if additional changes are determined to be needed, it is not necessary to write an additional C/PAR if the changes do not change the intent of the procedure. These changes include grammar, re-wording for clarification, spelling, updating of names, phone numbers, and/or references.
- 4.8 The EMS Coordinator will report final actions to MRB and record completed corrective/preventative action reports on the read-only drive. Any required changes in the documented procedures as a result of the corrective/preventative action will be completed by area supervisors per the Document Control procedure ([EMS-0100.002](#)).

**5.0 Biosolids Contractor**

- 5.1 The Biosolids contractor shall be an active participant in the CPAR process.
- 5.2 The contractor, or its representative, shall be trained on and is expected to comply with the requirements of the CPAR procedure.
- 5.3 The contractor will also be trained on how to generate a CPAR and/or provided a City contact to assist with the generation of necessary CPARs.
- 5.4 In addition, when notified by City Staff that Biosolids issues are going to be discussed at a CPAR meeting the Contractor or its representative shall be in attendance.

**5.0 Revision History:**

Revision		C/PAR #	Reason for Revision	Description of Revision
Date	#			
3/14/02	4	EMS-0074	External Audit	Removal of the section that states that deviations from this procedure must be documented in a C/PAR, the statement appears to give approval to deviate from the procedure.
8/7/02	5	EMS-0084	C/PAR	Added a modification history section
		EMS-0103	C/PAR	Added section stating that additional C/PARs are not required to make minor changes when already revising a procedure as a result of a C/PAR.
		EMS-0116	C/PAR	Added the National Biosolids Partnership (NBP) EMS element number to the header for linkage purposes and document control requirements. Also, added verbiage to include NBP requirement section on C/PAR if applicable.
11/18/03	6		External Audit	Streamlined the auditing and cpar process to complement one another. And for all findings during an audit to be tracked through the CPAR process.
	6		Internal Audit	Included a requirement for MRB to designate resources for complete corrective actions.
3/9/04	7	258	Internal Audit	Inclusion of Biosolids Contractor into the CPAR program.

## **DD-SEOP 4.5.2**

### **NON-CONFORMANCE AND CORRECTIVE AND PREVENTIVE ACTION**

#### **1.0 PURPOSE AND SCOPE**

This procedure describes a controlled process for initiating corrective and preventive action in response to externally or internally reported non-conformances that relate to the implementation of the ISO 14001 conforming environmental management system (EMS) established for the Wastewater Collections (WWC) Division of the City of San Diego's Metropolitan Wastewater Department (MWWD).

#### **2.0 DEFINITIONS**

##### **2.1 Non-conformance**

For the purposes of this procedure, a non-conformance is defined as a demonstrated lack of conformance to the environmental policy commitments and other mandatory provisions of the WWC Division EMS, as documented by the WWC Division Environmental Management Plan (EMP) and the supporting plans and procedures referenced therein.

Non-conformance with planned arrangements (including deviations from established procedures) can be identified by EMS Internal Audits (DD SEOP 4.5.4, Environmental Management System Audits and Compliance Verification), management reviews (DD-SEOP 4.6.1), or may be brought to the EMR's attention through internal and external communications (DD-SEOP 4.4.3), Communication of Environmental Information (Internal/External). Corrective action requests may be issued following non-conformances identified by the WWC Division's third-party ISO 14001 registrar during pre-assessments, registration audits, or follow-up surveillances.

##### **2.2 Corrective and Preventive Action Request Forms**

Corrective and Preventive Action Request (C/PAR) forms shall be initiated by the Environmental Management Representative (EMR) to facilitate the investigation of non-conformances, the determination of the root causes of non-conformances, the correction of non-conforming conditions, and the specific preventive actions that are deemed necessary to reduce or preclude the likelihood of recurrence.

#### **3.0 RESPONSIBILITIES**

##### **3.1 WWC Division Staff and Section Managers**

WWC Division staff are responsible for bringing suspected non-conformances to the attention of their assigned Section Managers, or to the EMR.

##### **3.2 Environmental Management Representative (EMR)**

The EMR is responsible for evaluating potential non-conforming conditions noted in internal or external communications, EMS audits, management review, or third-party registrar audits and surveillance activities, and for initiating the C/PAR process where non-conformances are

determined to exist. The EMR shall actively participate in the resolution of the non-conformance and shall work with the responsible Section manager or section supervisor to identify appropriate corrective and preventive actions. The EMR is responsible for preparing corrective and preventive action requests, verifying completion, and logging of the issuance and closure. The EMR shall prepare and present a report to management on a monthly basis identifying the current status and resolution of all C/PAR's.

### 3.3 Responsible Section Manager or Supervisors

Section Managers or Supervisors determined to have primary responsibility for a non-conformance shall participate with the EMR in the evaluation of the non-conformance, determination of the root cause of the non-conformance, determination of appropriate measures to be taken to correct the immediate situation, and the determination of appropriate preventive measures that could reasonably be taken to reduce or preclude the likelihood for recurrence of the non-conformance. It is the responsibility of the Section Manager, Supervisor or assigned management to ensure these corrective and preventive actions are completed within the determined time frame or report the progress and the revised completion dates to the EMR, prior to the original completion date.

## 4.0 PROCEDURE

The procedure consists of the following steps:

- 4.1 Upon receipt of environmental communications that indicate a potential non-conforming condition, or upon review of internal or external EMS audits, or management review reports that indicate a potential non-conforming condition, the EMR shall make a preliminary determination of whether or not a non-conformance exists.
- 4.2 For conditions identified through internal or external communications, and for which no non-conformance is determined to exist, the EMR shall make an appropriate verbal or written response to the originator through the processes defined in DD-SEOP 4.4.3, Communication of Environmental Information (Internal/External), and forward documentation of such action to the environmental records in compliance with Section 5.3 of the WWC Division EMP . If a nonconformance is determined to exist, go to step 3.
- 4.3 The EMR shall document the nonconformance on a C/PAR form (DD-F-006.0), assign the C/PAR a unique identifier (2 digit year/sequential number), and enter basic C/PAR information on the C/PAR Status Tracking Log (form DD-F-007.0).
- 4.4 The EMR and responsible Section Manager or supervisor shall discuss the non-conforming condition and its fundamental or root causes, and jointly develop appropriate measures that can be taken to correct the near-term condition, as well as preventive measures that could reasonably be expected to reduce or preclude the likelihood of the

recurrence of the nonconformance. The EMR shall forward a copy of the open C/PAR to the Section Manager with primary responsibility for the nonconforming condition, and jointly develop appropriate corrective and preventive actions.

- 4.5 Root cause determination and proposed corrective and preventive actions shall be briefly summarized on the C/PAR form. Approval signatures are required by the Section Manager, with appropriate implementation signatures and dates upon completion of the corrective action.
- 4.6 Due dates for completion of the proposed corrective and preventive actions shall be established, and the C/PAR updated as appropriate to document the EMR and Responsible Section manager or supervisors recommendations. Completion dates may be extended as determined necessary by the Section Manager or Supervisor with EMR approval. These extended dates will be noted on the C/PAR in addition to an explanation for the extension.
- 4.7 The EMR shall track the progress of corrective and preventive action completion using the C/PAR Status Tracking Log, and verify completion of all required actions. Once completion has been verified, the EMR shall indicate C/PAR closure by signature, and the completed C/PAR, with any attachments, shall be forwarded to the environmental records for retention in compliance with Section 5.3 of the WWC Division EMP.

## **5.0 REFERENCES**

WWC Division Environmental Management Plan

Section 4.3, Communication

Section 4.6, Operational Control

Section 5.1, Monitoring and Measurement

Section 5.2, Control of Non-conformances and Corrective and Preventive Action

Section 5.3, Records

Section 5.4, Environmental Management System Audit

Section 6, Management Review

DD-SEOP 4.4.3, Communication of Environmental Information (Internal/External)

DD-SEOP 4.3.2, Regulatory Tracking and Analysis

DD-SEOP 4.5.4, Environmental Management System Audits and Compliance Verification

DD-SEOP 4.6.1, Environmental Management Review

DD-F-006.0, CPAR Form

DD-F-007.0, CPAR Log

# CITY OF EUGENE - WASTEWATER DIVISION

## Procedure

<b>Subject:</b>	Nonconformance and Corrective Action			<b>Document No:</b>	WW-00016R3
<b>Last Reviewed By:</b>	Management Team	<b>Date Prepared:</b>	6/26/00	<b>Revision Date:</b>	2/6/03
<b>Approved By:</b>	Management Team	<b>Date Approved:</b>	2/6/03	<b>Next Review Date:</b>	2/1/05

### Purpose

This procedure describes the process to ensure that the Division establishes, maintains and uses a system to identify nonconformances from regulations or requirements and to specify a process to identify and track corrective and preventive actions.

### Scope

This procedure applies to all nonconformances requiring corrective or preventive action by staff. These will typically identified by the following methods:

- Internal and external audits
- Environmental Compliance Audits
- Safety Audits
- Inspections
- Incident Reports
- Complaints
- Compliance Inspections
- Permit Inspections

### Definitions

- [Audit Team](#)
- [Corrective Action Request \(CAR\)](#)
- [Environmental Compliance Assessment](#)
- [EMS](#)
- [EMS Manager](#)
- [External Auditors](#)
- [Nonconformance](#)

### Safety Requirements

All specific safety requirements will be included or referred to in specific work instructions.

### Procedure (Include reporting requirements and precautionary steps in this section)

#### Accountability:

Division Management Team

#### Responsibility:

Provide appropriate resources to ensure nonconformances are corrected.

Audit Team	Conduct conformance audit/internal or external assessment.
Audit Team Staff	Identify potential nonconformance and notify supervisor and Audit Team member by e-mail.
Audit Team	Determine whether the potential nonconformance meets the criteria for a nonconformance or an observation.
Lead Auditor	Enter nonconformance or observation information into CAR Database. Select either "finding" or "observation."  Submit CAR information to EMS Manager by e-mail.
EMS Manager	Review corrective or preventive action request information and inform Division Management Team of any identified nonconformance that involves a potential regulatory or legal noncompliance.  Determines appropriate staff to take corrective or preventive action. Enters appropriate staff name into CAR Database, and request corrective or preventive action.
Division Staff	Identify the cause of the nonconformance.  Identify appropriate corrective or preventive action. Complete Corrective Action Approval Request in CAR Database and forward electronically to EMS Manager, with copy to work section supervisor (if supervisor does not complete form).
EMS Manager	Reviews Corrective Action Approval Request. Requests additional information if necessary. Consults with Division Management Team prior to approving . recommended corrective or preventive action.
Division staff	Implement the necessary corrective or preventive action.  When corrective or preventive action is completed, fill out Corrective Action Completion Details form in CAR Database. Forward by e-mail to EMS Manager.
EMS Manager	Closes corrective or preventive action.
Internal Auditors	Include review of completed corrective or preventive actions in scope of audits.

## References

- ISO 14001 Standard, 4.5.2 Non-conformance and Corrective and Preventive Action
- [EMS Manual, Nonconformance and Corrective Action Policy](#)
- [Internal Audit Procedure](#)
- [Monitoring and Measuring Procedure](#)



# **SAMPLE EMS DOCUMENTATION**

## ***MANAGEMENT REVIEW***



***City of Eugene WWTP – Management Review Procedure***  
***City of San Diego WWC – Environmental Management Review Procedure***

# **CITY OF EUGENE – WASTEWATER DIVISION**

## **Procedure**

<b>Subject:</b>	Management Review		<b>Document No:</b>	WW-00019	
<b>Last Reviewed By:</b>	Management Team	<b>Date Prepared:</b>	8/8/00	<b>Revision No:</b>	3
<b>Approved By:</b>	Management Team		<b>Date Approved:</b>	2/13/04	

### **Purpose**

The purpose of this procedure is to define the minimum requirements for conducting management review of the Division's Environmental Management System.

### **Scope**

This procedure applies to management reviews performed by the Division Management Team and the EMS Team. Management reviews will consist of comprehensive annual evaluations to determine the adequacy of the:

- Division's environmental policies and procedures
- Current environmental objectives and targets
- Overall effectiveness of the EMS in facilitating achievement of environmental objectives

### **Definitions**

- [Division Management Team](#)
- [EMS](#)
- [Environmental Objective](#)
- [Environmental Target](#)

### **Safety Requirements**

All specific safety requirements will be included or referred to in specific work instructions.

### **Procedure (Include reporting requirements and precautionary steps in this section)**

#### **Accountability:**

EMS Manager

#### **Responsibility:**

At least annually, coordinate and conduct management reviews.

Summarize data from:

- EMS audits
- objectives and targets information
- correspondence from interested parties
- significant changes to the EMS
- other relevant documentation concerning the EMS

Manage production of Division Annual Environmental Report

Supervisors

Review work section's activities semi-annually in relation to EMS objectives and targets, training, and aspect management.

Provide summary and recommendations for improvements to EMS Team.

EMS Teams

Document any observations, conclusions and recommendations for improvement.

Prioritize needed EMS conclusions and recommendations for improvement and report to EMS Manager.

EMS Manager  
Division Management Team

In management review, evaluate the above information to assess the effectiveness of the EMS, and if it is contributing to continual improvement of the Division's environmental performance.

Assign responsibility and deploy resources to facilitate changes to EMS.

Distribute findings of semi-annual reports to Division Staff.

EMS Manager

Create record of management review meeting(s), and forward to Document Control Specialist

Document Control Specialist

File record of management review.

Supervisors

Implement necessary changes, or assign responsibility for necessary changes. Follow [Documentation/Document Control Procedure](#).

Communicate any policy and procedural changes to staff.

Division Staff

Comply with changes to the EMS.

## References

- ISO 14001 Standard, 4.6 Management Review
- [EMS Manual, Management Review Policy](#)
- [Documentation/Document Control Procedure](#).

## **DD-SEOP 4.6.1**

### **ENVIRONMENTAL MANAGEMENT REVIEW**

#### **1.0 PURPOSE AND SCOPE**

The purpose of this procedure is to define the minimum requirements for conducting annual, independent management reviews of the ISO 14001-based environmental management system (EMS) established for the City of San Diego's Metropolitan Wastewater Department (MWW) Operations and Maintenance (WWC) Division. This review will be conducted in order to ensure the effectiveness, sustainability and adequacy of the EMS with the objective of continual improvement. This procedure covers all personnel affecting WWC's operations, activities, and products

#### **2.0 DEFINITIONS**

##### **2.1 Management Reviews**

Management reviews are defined as comprehensive evaluations performed by or at the direction of the Deputy Director, WWC Division in order to determine the adequacy of

- the WWC Division's environmental policy;
- current environmental objectives and targets relative to the WWC Division's overall policy goals; and
- the overall effectiveness of the EMS in facilitating the achievement of environmental policy goals and specific environmental objectives.

Management reviews should not be confused with periodic EMS Management Team briefings, internal EMS audits (see DD-SEOP 4.5.4, "Environmental Management System Audits") or third-party ISO 14001 EMS registration audits. However, management reviews should consider the results of recent internal and third-party EMS audits, along with 1) the extent to which objectives and targets have been met; 2) changing operational or regulatory conditions; 3) the concerns of interested parties; or 4) future needs or other external factors which may affect the necessary structure and content of WWC Division's EMS.

##### **2.2 Interested Party**

An interested party is defined as any individual or group concerned with, interested in, or potentially affected by the environmental performance of the WWC Division. Examples of interested parties may include regulatory agencies or authorities; community groups; environmental organizations; the press; or employee organizations.

### **3.0 RESPONSIBILITIES**

#### **3.1 Deputy Director, WWC Division**

The WWC Division Deputy Director is responsible for performing or supervising the performance of independent, documented, annual management reviews of WWC Division's EMS, as described in this procedure.

#### **3.2 Environmental Management Representative**

The Environmental Management Representative (EMR) is responsible for assisting the Deputy Director, WWC Division or his designee in the performance of management reviews by providing audit reports, environmental performance data summaries, environmental communications records, third party audit correspondence, or other information as may be requested. The EMR is also responsible for the planning and execution of any mandatory action items that may be established as a result of the management review.

### **4.0 PROCEDURE**

The management review process is described in the following steps and is summarized as a flowchart in Figure 1:

#### **4.1 Management review shall be conducted at least once a year, however, may be more frequent depending on internal or external audit activities.**

The management review team shall consist of the following members:

- Deputy Director (or designee)
- EMS Management Representative
- EMS Steering Committee members i.e. Section Managers and designees

#### **4.2 If for any reason an EMS Steering Team member cannot attend the meeting, he/she appoints an alternate person to represent his/her function at the meeting. At least 75% of the EMS Steering Team shall be in attendance to meet the management review attendance requirement.**

#### **4.3 The EMS Management Representative is responsible for:**

- setting up management review meetings;
- assigning responsibility for taking the meeting minutes to one of the meeting attendees;
- publishing the meeting minutes; and
- ensuring the meeting minutes and attendee list are retained according to record retention procedural requirements.

#### **4.4 The EMS Management Representative prepares and issues the meeting agenda in advance that may include some or all of the topics listed in Figure 1.**

- 4.5 The EMS Management Review Team shall discuss the agenda items and assess the effectiveness, suitability and adequacy of the management system. Some or all of the following shall be used in the assessment process:
- progress of objectives and targets
  - overall program results
  - internal and external audit results
  - closure of C/PARs
  - risk assessment results
  - other policy and procedure modifications relative to operational changes
- 4.6 Assessment results, decisions, and action items from the meeting are recorded in the Management Review Meeting Minutes Summary Form. The EMS Management Representative shall keep these minutes according to DD SEOP 4.5.3, “EMS Recordkeeping”..
- 4.7 The EMS Management Representative or his/her designee shall monitor progress to ensure that action items raised during the management review are promptly addressed. Areas needing improvement shall be planned into the next internal audit.

## **5.0 REFERENCES**

WWC Division Environmental Management Plan,  
Section 2, “Environmental Policy”;  
Section 3.3, “Objectives and Targets”;  
Section 5.3, “Records”;  
Section 5.4, “Environmental Management Systems Audits”;  
Section 6, “Management Review”.

DD-SEOP 4.3.3, “Establishment of Environmental Objectives, Targets and Programs”

DD-SEOP 4.4.3, “Communication of Environmental Information (Internal /External)”

DD-SEOP 4.3.4, “Environmental Action Requests”

DD-SEOP 4.5.4, “Environmental Management System Audits and Compliance Verification”.

**FIGURE 1**  
**MANAGEMENT REVIEW PROCESS**  
**(DD-SEOP 4.6.1)**

**FIGURE 1A - SAMPLE EMS MANAGEMENT REVIEW MEETING**

Month, Date, Year

Agenda

To meet WWC's commitment to continual improvement of the EMS, a discussion of the continuing suitability, adequacy and effectiveness of the EMS topic(s) discussed will be carried out through a review of the EMS. The EMS topics(s) discussed during the EMS Management Review meeting, findings, and any action items assigned must be recorded on the EMS Management Review Minutes Summary Form (See Doc. No. DD-F-010.0). Example agenda items are listed below:

- Review overall EMS system
- Review Environmental Policy
- Review significant aspects/hazards and impacts/risks
- Review and approve EMS objectives, targets, and programs (versus program results)
- Review environmental compliance performance
- Review environmental training system
- Review internal and external communications processes, including communication of significant environmental issues
- Review EMS internal and external audit findings
- Consider possible improvements in the EMS as it has been developed
- Discuss budgets and expenditures since last management review
- Discuss site preparations for any up-coming third party EMS audits
- Other agenda items

The following must be addressed and documented on the EMS Management Review Meeting Minutes Summary:

- Is the EMS topic/issue discussed suitable, adequate, and effective? If not, indicate proposed changes and/or improvements.
- Are changes to policy, objectives, or other areas of the EMS necessary? If so, indicate change(s) and proposed implementation method.
- Any additional action items/areas for improvement

## **FIGURE 1A**

### **SAMPLE EMS MANAGEMENT REVIEW MEETING**

#### **Agenda (Continued)**

In order for management to effectively carry out their review, the following documents/items listed below are examples of reference materials that may be used during the EMS management review meeting. Additional reference materials not listed below may also be used. All applicable documents or other information utilized during the meeting must be attached and/or referenced in the EMS Management Review Minutes Summary Form (See Doc. No. DD-F-010.0) and/or meeting minutes.

- A review of previous EMS Management Review meeting minutes/action items
- Applicable environmental incidents, non-conformances and corrective action plans/reports
- Applicable employee suggestions and safety committee meeting minutes
- A review of applicable WWC EMS metrics
- New or changed legislation
- Changes in applicable technology, including work processes
- Changes in business environment or WWC' s financial and/or competitive position that may influence policy, objectives and targets



**FIGURE 2A**  
**EMS MEETING ATTENDANCE SHEET**

**DD-F-010.0**

**MANAGEMENT REVIEW MEETING MINUTES SUMMARY FORM**

Meeting Date:

Item #	EMS Topic Discussed	Suitable	Adequate	Effective	Policy	Objective(s)	Other Elements	Action Item(s)/Notes	Target Date
		(Y/N)			Change Necessary? (Y/N)				
1									
2									
3									
4									

\* Use additional forms or attachments as necessary